

# MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

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## Manufacturers' Record.

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RICHARD H. EDMONDS,  
Editor and General Manager.

THOMAS P. GRASY,  
General Southern Correspondent.

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BALTIMORE, DECEMBER 18, 1896.

## Virginia Slate to Cover Liverpool Buildings.

J. R. Williams & Co., of Arvonia, Va.,  
quarrymen and dealers in Buckingham  
(Va.) roofing and building slate, in a  
letter to the Manufacturers' Record,  
say:

We have just made a shipment of five car-  
loads of Buckingham (Va.) slate to Liver-  
pool, and will ship five carloads more next  
week. These shipments are made from  
Newport News via the Chesapeake & Ohio  
Steamship Line.

We are just in receipt of another large  
order for slate to cover one of the finest  
buildings in Liverpool, the new postoffice  
building.

This shipment of Virginia slate to  
Liverpool again illustrates how rapidly  
Southern products are forcing them-  
selves into foreign markets.

## An Unwise Effort to Reduce Postage.

A persistent effort is being made  
throughout the country by an organiza-  
tion formed for that purpose to se-  
cure a reduction of letter postage to  
one cent. This organization is a money-  
making enterprise. It has its agents  
out canvassing for subscriptions, and,  
wherever possible, securing contracts  
promising that the signer will pay to  
the company one-half of what he saves  
on postage the first year after a reduc-  
tion to one cent goes into effect. We  
presume that this contract is practi-  
cally perpetual, and that it would hold  
good years hence, without regard to  
whether the efforts of this organization  
prove of any service or not. The main  
point, however, is that a reduction of  
letter postage is not needed nor is it  
desirable. At present letters and  
trashy circulars are generally distin-  
guished by the difference in postage,  
and a busy man can with safety throw  
away without stopping to examine  
every unsealed envelope having only  
a one-cent stamp on it. With all letter  
postage reduced to one cent, there  
would be no distinction between let-  
ters and circulars, and the country  
would be flooded with useless trash in  
the way of useless circulars. What is  
needed is a better service, not lower

rates. The former is urgently de-  
manded; the latter is not wanted.

## The Nicaraguan Canal.

One subject of national importance  
that ought to receive the attention of  
Congress at this session is the recom-  
mendation of the commission of skilled  
engineers that was sent to Nicaragua  
to examine the canal route and to  
ascertain whether the construction of  
a great interocean waterway is fea-  
sible. That commission reported that  
it was perfectly practicable to build  
and to maintain a canal equal to all  
the needs of the world's commerce and  
to the government's use as a short cut  
between the two oceans for its naval  
ships of the largest class. It squelched  
completely the allegations urged by  
those opposed to building any isthmian  
canal whatever that nature interposed  
insuperable barriers to the successful  
construction of any such waterway.  
The commission, while asserting the  
practicability of the undertaking,  
thought that before the great work was  
undertaken by the government, it  
would be wise to have a much more  
thorough examination made by ex-  
perts than had been given the country  
by preceding engineers. There were  
grave doubts as to some of the most  
important key points of the plans that  
had been drawn by the engineers of  
the Maritime Canal Co., and particu-  
larly those for the construction of the  
Ochoa dam. They were not at all sure  
but that various changes from the pro-  
posed route and the eastern and west-  
ern terminals might be made that  
would give greater security to the  
maintenance of the completed canal,  
save the annual expenditure of large  
sums of money for current expenses,  
and secure better harborage at both  
terminals. They recommended, there-  
fore, that another commission be sent  
to the Isthmus, with instructions to  
take all the time required for a com-  
plete investigation of the entire ques-  
tion, and with authority to spend what-  
ever money might be required for  
thoroughly effective work.

From a statement made by the Mar-  
itime Canal Co. to the Interior Depart-  
ment, it appears that no work has been  
done on the Isthmus for more than  
three years, the hard times since Au-  
gust, 1893, having prevented the com-  
pany that had taken the contract from  
attempting to carry it forward.

Thus this great work has been de-  
layed, first, by those opposed to the  
building of any canal, and next, by the  
neglect of Congress to grant the auth-  
ority for another commission and make  
the appropriation needed for the work.

Probably the only thing Congress can  
do at this short session is to act favor-  
ably upon the commission's recom-  
mendations and get experts into the field  
as soon as possible; otherwise another  
year will be lost and the country be no  
nearer to this splendid attainment than  
it has been in the past.

In this issue we publish a letter  
from Mr. Joseph Nimmo, Jr., who has

been an active opponent of the canal.  
Following its custom, the Manufacturers'  
Record opened its columns to Mr.  
Nimmo's communication, though we  
are satisfied that there is absolutely  
no just basis for his antagonism to the  
canal.

## An Englishman's Idea.

At the annual meeting of the "Insti-  
tution of Electrical Engineers" of  
Great Britain, held late last month,  
Dr. John Hopkinson, its president, said  
some things worth considering in this  
country. He was talking about the  
progress of the practical application  
of electric power to the industrial arts,  
and, in enlarging upon the subject,  
said:

England owes her prominent position to  
the fact that she was the first to use coal on  
a large scale. If the employment of that  
material as a basis of power were to cease,  
British supremacy would go with it. The  
Falls of Niagara heretofore wasted more  
power every day than could be derived from  
all the coal mined in the whole world, and  
in the future it will be the work of electrical  
engineers to utilize it and other waterfalls  
for the transmission of power for purposes  
of traction and industrial undertakings.  
When this shall be fully realized, there will  
be but two courses open to Englishmen:  
They must either live on their accumulated  
savings, or they must fit to countries having  
greater water-powers than their own.  
In either event, the manufacturing supremacy  
of England would go.

The Manufacturers' Record calls atten-  
tion to these statements, made last  
month by one of the most eminent of  
the practical electricians of Great  
Britain, because they predict what, at  
no distant day, must come to pass in  
this country, and more particularly in  
the South, if its people shall be equal  
to their opportunities.

It is a wonderful provision of nature  
that on both sides of this country, be-  
tween the mountains and the coast,  
there are innumerable streams flowing  
with such immense potentialities that  
their aggregates on both the Pacific  
and the Atlantic coasts far surpass the  
rushing waters of Niagara, which this  
English expert electrician says has  
wasted "more power every day than  
could be derived from all the coal  
raised in the whole world."

Without considering the immense  
powers that are not utilized that flow  
east and west from the Rocky moun-  
tains, or those others from the Cascade  
and Olympic ranges of the West, think  
for a moment of those that flow from  
the Southern Appalachian system, both  
east and west, and try to grasp the idea  
of their immense potentialities. The  
swift current of these streams carries  
potentiality enough to illuminate the  
cities along their banks and to furnish  
immense power for industrial operations.  
Convert this waste into electricity,  
carry it by wire to the places on  
railroads already constructed, just  
as Niagara's power has been conveyed  
to Buffalo, and many centres of manu-  
facturing industries can be created  
that will eventually fill this entire section  
with continuous lines of manu-  
facturing towns, in which varied indus-  
tries can be maintained that will give  
to the States in which they will be ope-  
rated the leadership in the markets of  
the world, in competition with Great  
Britain and all the manufacturing na-  
tions of Europe.

Dr. John Hopkinson is a practical  
man. He predicts what some day will  
surely come to pass, for the people of  
the South will in time come to a reali-  
zation of the value of their water-  
powers, and will harness them to their  
own use.

## Another Reason "Why the South is Poor."

"Why the South is Poor" is the subject of  
an editorial in the Manufacturers' Record  
of last week. One of the reasons is not to  
be found in items of which the  
following from our Raleigh special yester-  
day is a type:

"This week a loon, or 'great Northern  
diver,' was brought in by a Mr. Lassiter,  
of this county. It was killed in a mill-pond  
in Wake, and thirteen men put in nearly a  
day killing it. They took stations with guns  
around the pond and had to tire the bird out.  
It dived until it could do no more."

Thirteen grown men put in one whole day  
tiring out a loon. Naught's a 0; 5 3s are  
15—put down 5 and carry 1; 5 1s are 5, and  
1 to carry makes 6; so that at fifty cents a  
day, a low estimate, this loon cost \$6.50 in  
the time of the men it took to catch it. It  
is this 13-to-1 business that keeps the South  
poor—13 men to 1 loon, 1 rabbit, 1 squirrel,  
1 fish, and all that; to put it in another way,  
too much idleness, too much frolicking for  
the amount of work that is going on.—Char-  
lotte (N. C.) Observer.

The Observer can afford to talk this  
way. Its editor is such a hustler that  
he gets up a paper that is a stimulation  
to the whole community and is a credit  
to the State. Moreover, one of its  
owners, Mr. D. A. Tompkins, who is  
president of several cotton mills and  
of numerous other enterprises, works  
about twenty-five hours out of every  
twenty-four and then worries because  
the days are too short. A year or so  
ago, when Mr. Tompkins chaperoned  
an excursion of half a dozen of New  
England's most hustling cotton-mill  
millionaires through the South, he  
made them spend every hour of day-  
light looking at cotton mills and then  
travel all night. In the morning these  
New Englanders would look out from  
their berths only to find Mr. Tompkins  
impatiently waiting for breakfast and  
wondering how those slow, late-rising  
New Englanders ever managed to suc-  
ceed in running a cotton mill. With  
two such owners the Observer can  
afford to complain about thirteen men  
spending a whole day in trying to tire  
out a loon. But, as one of these New  
Englanders said to the writer, it would  
be dangerous to New England to have  
many such men as the editor of the  
Observer and Mr. Tompkins in the  
South, for, said he, "we people in New  
England would soon have to move  
down bodily or get left in the struggle."  
The thirteen loons (or was it one loon  
and thirteen men?—the difference prob-  
ably isn't very great) help therefore to  
average down the energy and hustle of  
such men as Tompkins and Chadwick  
and Whaley and others who are help-  
ing to make two cotton mills grow

where not even one grew before. For New England's safety, therefore, don't be too hard on the thirteen looms. In the continued existence in every neighborhood in the South of at least a few of this class depends the continuance of some of the dead weight that the live people of this section must carry, and hence the continued safety of New England. If everybody in the South hustled prosperity would increase so rapidly that there would be danger of too great riches becoming the root of all evil and of the bodily transfer of all New England's cotton mill business to this section.

#### A Wise Campaign Suggested by a North Carolina Paper.

Every State ought to make its own bread and meat. It is an unwise people who do not feed themselves by their own labor when everything is propitious. North Carolina should see to it that every pound of meat and every pound of bread is of home product. Raise your own hogs, cows, sheep, fowls. Raise your own breadstuff—wheat, corn, rye, oats. North Carolina has great capabilities under wise and energetic farming. Raise your own wheat. Begin now. The Scotland Neck Commonwealth says:

"Every bushel of wheat raised on the farm is a good weight in the balance of home independence; and the farm that does not support itself does not show the very best management.

"It was remarked to us a few days ago by one who had made extensive observation that the farmer who does not sell as often as he buys is not a good farmer, or words to that effect.

"The planting of wheat would save the buying of flour to the farmer, and thus take one more article from the end of the scale which so often goes down against him."

Let us have a very active campaign in this State for the next four years of food-raising. Let there be a regular campaign for pork and beans, hog and hominy, meat and greens. Make your home supplies if you do not make money. You will not starve under gold and a high-tariff tax if you work industriously, save all you can, raise all you eat and keep out of debt. Give politics a rest and take to the plough and the hoe.—Wilmington (N. C.) Messenger.

Let this be the South's policy for four years. Quit politics, diversify agriculture, and bend all energies to material affairs, and in four years the South will make such progress as will surprise the world. Let the people and the press of the whole South unite on this and see the result. Some years ago the writer was in Anniston, Ala., when a large number of Northern business men visited the town. One of these visitors commented upon the fact that, contrary to his expectations, he had seen nobody loafing around the stores, as he had supposed was the general custom in small towns, and he had not, during his entire visit, heard a single political discussion. A local business man replied by saying that everybody in Anniston was too busy hustling to take time to talk politics or to loaf around the stores. Let this be the case throughout the South; let it be regarded as disreputable to hang around country stores discussing politics and whittling while the farm needs attention; let every community undertake to develop a rivalry as to the best cultivated farm, large and small; let every community, by the aid of the press and a few leading people, make loafing around depots and stores such a proof of laziness and worthlessness that men everywhere throughout the South will give their time and attention to the improvement of their farms, to the diversification of crops, or to some other employment that will better their own condition and advance their country—then we shall see the South prosper in a way little dreamed of now. Let us have four years of unceasing, united work for financial betterment

for the individual as well as for the country. That will give a chance to test financial questions.

#### Correct the Mistake.

Nearly a year ago the Manufacturers' Record gave a full page to an account of the great dry-dock at Port Royal and its worthlessness to the government until the equipment should be provided for repairing vessels. Here is probably the finest dock in the country, built at large expense, and yet without any machine shops for doing repair work to vessels that are docked. Is it possible to imagine anything more senseless? For all practical purposes the dock as it stands might almost as well be located on some North Carolina mountain top. The Augusta Chronicle, commenting on this, says:

The commandant at the government naval station at Port Royal, before the completion of the great dry-dock there, confidently predicted that as a matter of necessity all of the mechanical plants required for thorough repairing of naval vessels would be located on Paris Island. This has not been done, for some reason, but recent events may compel action in the premises. The government naval engineer-in-chief's report says:

"The completion at this station of the only dry-dock on the Atlantic coast which will take the battleships makes it imperative that there should be facilities at hand for doing the ordinary repair work that may be required when one of the vessels is docked, some of which can be done only at such a time. The necessity for providing for such repairs is too evident to require argument, and especially as the great draught of water of these ships renders it almost impossible to take them to either the Norfolk or New York navy-yard for repairs."

The Washington Post, with this significant report before it, makes the following just and indignant comment:

"Why, in the name of common sense, were not these indispensable facilities provided long ago? It takes time—a good deal of it—to construct the heavy mechanical appliances needed in repairing a battleship. Why were they not authorized and contracted for so as to be ready for use on the completion of the dock? A man capable of managing a peanut stand would not blunder as Congress has blundered in the matter of ship-repairing facilities on the Pacific and Atlantic coasts."

Various reasons for such apparently culpable neglect of the government's best and greatest dry-dock have been assigned. The fact of the dock being located on the Southern coast roused miserable sectional resentment. All of us remember how difficult it was to get the Indiana ordered there, and how many excuses were made for postponing that event. There is no longer any question of the pre-eminence of the Port Royal dock, and only the grossest negligence can delay the erection there of imperatively necessary mechanical plants. An appropriation should be made at the coming session of Congress and availed of as soon thereafter as possible. Some of these days the United States may bitterly and expensively repent the treatment accorded to Southern defences and the splendid dry-dock at Port Royal.

Our esteemed contemporary, the Utahian, of Salt Lake City, edited by Col. Pat Donan, known to many of all sections, whose pen has ever been touched with a combination of the sublime and the vindictive, seeks to make known to the world the glories and attractions of Utah by publishing as the frontispiece of every issue the picture of some rarely beautiful woman, claiming them to be types of Utah's products, and then, while chanting the praises of the State and urging its people to seek to draw capital from the East for investment, touches, with a copiousness of language and a vindictiveness unknown to any other writer, the "goldbugs" of the East. If Col. Pat would only publish the pictures and give proof that the Utah girls are only half as beautiful as his photographs, the railroads could scarcely

haul the people who would flock to the State. But his combination of beautiful women and booming Utah's resources will hardly offset his denunciations of all who oppose free silver. The mildest thing we have seen lately from him on this line is the following, in his last issue:

No goldbugger should ever again be allowed to take part in democratic councils. He belongs with Dives; and Dives belongs in hell.

We are afraid the Colonel is losing his grip, and that the exceeding mildness of this paragraph (for really this is mild for him) indicates the softening influence of the beautiful photographs that he is publishing. And yet Colonel Donan, while consigning his goldbug friends to a place where, according to all tradition, paper money would be valueless, unceasingly praises the advantages of Utah for the investment of money by these same goldbuggers.

#### Ought to Be Followed by Other Railroads.

The announcement made in the Manufacturers' Record last week that the Seaboard Air Line would establish 100 small experimental farms has awakened a very lively interest throughout the South. If all other roads could see how the Seaboard is winning to itself thousands of friends among farmers and business men alike by its wide-awake policy looking to the advancement of the country along its line, they would realize that this friendship alone is worth to this company a hundred times the cost. The Manufacturers' Record really regrets the necessity so often forced upon it to give space to commendation of a few such lines as the Seaboard and the Illinois Central. If other roads in the Central South are doing anything to be compared with the work of these two systems, they take good care to keep the facts from the public. We only wish that week after week we could have occasion to tell of the good work of other lines. Our columns are open to them; in fact, the Manufacturers' Record vigorously hunts for news of their work of development for which to praise them, but while pressing their activities in many directions they are minimizing the work of immigration and industrial development. Where they have a department for this business, the managers seem to begrudge all money thus expended, failing to appreciate that it should be more liberally and judiciously supported than any other branch of their work. As an illustration of the good effect of such work as the Seaboard is doing, an editorial in the Columbia (S. C.) State is an example. After republishing in its editorial columns the particulars given in the last issue of the Manufacturers' Record, the State says:

This is a great work. We do not hesitate to say that it is the wisest and most beneficial undertaking essayed by any Southern railroad of which we have knowledge. Railroads may improve their schedules and their transportation and terminal facilities; they may establish lines of steamers to foreign ports; but none of these things, creditable and advantageous as they are, can do such service to this section as the Seaboard's establishment of experiment stations. The others facilitate the distribution of products, but the Seaboard's plan is to diversify them, increase them and sell them, and thus augment permanently the wealth of the South.

One of our greatest needs is that which this enterprising line is about to supply. We have State and other experiment stations, but they have devoted themselves rather to the improvement of the staple products we already have than to the discovery of new ones. It is well enough to know the best varieties of cotton and corn,

and how best to fertilize and cultivate them; but what we need far more than this is a variety of new and profitable crops. They need not be staple crops; crops that everybody can raise and that the agriculture of the South can rest on. We have staples already, some of them peculiarly Southern, that all our farmers understand. There is already too much dependence on staples. What we need now is crops new to this section and not likely to glut the market; a variety of them, so that the thrifty farmer may diversify and have many supports, instead of two or three. What we need is less planting and more farming.

So we rejoice in the wise forethought and the admirable enterprise of the Seaboard Air Line, and hope that its example will be followed by the larger systems throughout the South.

#### An Opportunity for Some Millionaire Philanthropist.

With the increase of individual wealth in the South, a growing disposition to make large contributions to public and educational enterprises is developing. The most recent instance is the gift of \$100,000 by Mr. Washington Duke, of Durham, N. C., to a school in that town which he and his family had previously liberally aided. Last year Mr. Ginter, of Richmond, expended nearly \$1,500,000 in building a magnificent hotel, the equal of which in some respects can hardly be found elsewhere in the country. This great Richmond hotel was built by Mr. Ginter more as an ornament and attraction to the city than as a money-making investment, although it may prove profitable. There is one opportunity for some broad-minded rich man to imitate the example of Mr. Ginter and Mr. Duke, and to make a gift, the value of which no man can adequately portray. One of the most vital needs of the South is technical training. The rising generation and generations yet to come will bless the man who will establish a technical school in the South, making it the equal of the best in the land, and so liberally endow it that under certain conditions tuition could be free to many scholars. Who will rise to the occasion? It is an opportunity worthy of the generosity of the most liberal-minded. In furnishing technical training to hundreds of Southern boys, it would exert an influence upon the future of this section and upon the advancement of its industrial interests beyond our power to calculate. What millionaire or combination of millionaires wants to make his name immortal, to create an institution that will be of even more value to the South than the Johns Hopkins University is to Baltimore, and to do for humanity a work of almost infinite importance, by giving to thousands, and as the years roll on, to tens of thousands, the opportunity to learn how to benefit themselves and their country.

Mr. M. E. Ingalls, president of the Chesapeake & Ohio Railroad, in a letter to the Manufacturers' Record, referring to the proposed currency convention called for Indianapolis, says: "I was in favor of holding the convention at Washington, so as to draw a large representation from the South, but the Indianapolis people seemed to have the control, and therefore I yielded. The matter is in the hands of a special committee of its citizens, and they are using every legitimate effort to promote the attendance. I hope for good results from the convention, especially in the line that you suggest. We must enlarge our banking laws, so as to help the South." The suggestion to which Mr. Ingalls refers as having been made in a letter to him was that special efforts ought to be put forth to secure a large attendance from the West and

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South, in order to secure from the best business men of those sections a rightful understanding of their banking needs.

#### How to Develop the Machinery Trade with the Baltic.

Louisville, Ky., December 12.  
*Editor Manufacturers' Record:*

During the past year the subject of exporting American goods to the Baltic has received much thought and attention at the hands of our manufacturers.

A great impetus was given this important matter when Consul T. Soegaard, of the Danish State Department at Copenhagen, visited some of the principal cities in the United States last spring and laid before our manufacturers a feasible plan by which we could secure a portion of this valuable trade. As a result of his mission in this country, many of our manufacturers have visited Copenhagen, which is the proper distributing point for the Baltic, and have been successful in introducing their goods.

The trade is a valuable one; it supplies a population of nearly 50,000,000 people, and it is reasonable to say that these have use for most everything we produce in this country.

At present the English and German manufacturers are monopolizing this trade almost exclusively, but when American-made goods are presented to the merchant on the Baltic in comparison with goods of either English or German manufacture the selection is made in favor of the American article, even at a slight advance in cost. There is but one reason for this; the superiority of American goods is apparent at a glance.

The ingenuity and exceeding simplicity so characteristic of our machinery are readily recognized and appreciated in all parts of the civilized world, and in consequence American machinery is preferred and accepted in preference to all others where transportation charges do not prove too great a detriment in competing with other goods.

The trade on heavy machinery on the Baltic is deserving of special notice and attention by our manufacturers, for Sweden, Russia and Finland are all engaged in manufacturing to a more or less extent. A visit to a few of the factories and mills in these countries would demonstrate the need of modern machinery, such as we manufacture here.

An excellent opportunity therefore presents itself to our manufacturers, and the matter should be followed up if we really desire a portion of the trade.

The matter of ocean rates does not present itself in such a formidable shape as it did a year ago, for many easements have been secured, and with the prospect of a steady flow of American traffic to the Baltic, many more concessions can reasonably be looked for in the future.

This trade can only be handled to the best advantage by having a representative on the ground, in the same manner we handle similar business in this country. The machinery business requires constant watching. If a new factory or mill is to be built or an old one refitted, the machinery men must know it in ample time to solicit the order for his goods, and, if necessary, to make sketches and drawings of the proposed new plant. It will be evident to those in this line of business that they could not conduct their business in the Baltic or any other place from an opposite side of the ocean without a representative on the spot.

From a letter recently received from Consul Soegaard on this very subject, the following is quoted as being especially pertinent to the subject:

"In speaking with Mr. Gustav Halber-

stadt, of this city (Copenhagen), I presented to him the plan which I have advanced at several places in America concerning co-operation between manufacturers of heavy machinery and a firm here. I shall here briefly repeat it. Machinery for saw mills, flour mills, cement factories, ship-yards, cotton and woolen mills, mining, railroad and harbor construction, electrical plants, grain elevators, etc., for all of which there is the very best market on the Baltic and in the interior of Russia, can only be sold in this way: A competent mechanical engineer must go to the places where and when such machinery is wanted, and there make plans and specifications and quote prices. He must have his office with some suitable firm here in Copenhagen, who, for a stipulated per cent. of actual business transacted, shall assist him in getting into business, in getting introductions to the people he may wish to meet often in foreign countries, in getting out papers of identifications, when such are necessary, and who shall give him technical assistance here in Copenhagen when he may need it. Such a firm shall further attend to the reloading of machinery coming here in transit to Sweden, Finland or Russia, pay freight and other charges generally defrayed by forwarding agents, and, if agreed upon, handle the money. The manufacturers should pay their own engineer or representative. In this way there can be sale for American machinery of the heaviest type.

"This is the way the English, and especially the Germans, work this market. I have found lately by personal investigation that there are at least four so-called technical bureaus or offices here in the city representing and working up business for German factories by being on the spot in time and making specifications, etc., and it is a practical method, as is proved by the contracts they obtain and the sums they take out of these countries annually. Mr. Halberstadt fully concurred with me, and when I suggested that he give free desk room he resolutely offered an entire room for the representative of one or several manufacturers whose machinery could be sold to advantage in the manner pointed out. He says that with free office, the living expenses of such a representative would not exceed 4000 kroner (\$1000) per year, traveling expenses not included. If a manufacturer can find one or two other manufacturers of heavy machinery with whom to combine, the expenses would be easy. As to actual and final arrangement, that would, of course, be a matter which would rest entirely with the manufacturers and Mr. Halberstadt. Here I have only outlined the plan and my conversation with him concerning it."

Consul Soegaard is a native of Copenhagen, and has closely studied the conditions of Baltic commerce for years, and he is firmly convinced that Americans can place their goods in this market. It must be borne in mind that the Baltic merchants have the money with which to buy; therefore they have no accommodations to ask, nor will the American manufacturer be called upon to take in exchange for his goods any commodity or product of the soil, as is often required in export trade with some other countries.

CHARLES E. CURRIE,  
Royal Danish Vice-Consul.

According to a report from Marksville, La., a bed of coal has been discovered within the town limits. The deposit lies 225 feet below the surface, and it is claimed that specimens examined show but little trace of foreign matter, and burn freely with a clear flame. Workmen boring a well made the discovery.

#### Our Country's Greatest Need.

By Prof. A. H. Eaton, President of the Eaton & Burnett Business College, of Baltimore.

It must be conceded by all thoughtful persons that our people are not fairly represented in our national Congress.

The representation is partial and one-sided. The leading industries of our country are not represented.

Men who have large interests at stake, whether capital or labor, are often obliged to submit to great wrongs on account of not having their interests properly represented or protected by those who are directly interested, and who could present and urge their claims as they really exist.

Congress is largely composed of two classes of men—those who have secured their seats not by virtue of superior knowledge or wide experience, but simply by means of their abundant wealth, the interests of which they are there to further, and of members of the legal profession who are scarcely fitted by education or experience to make, modify or abrogate laws for the banker, artisan, farmer, merchant and manufacturer. These interests should be represented by honorable men who have proved themselves masters in their respective vocations.

Long-winded speeches and filibustering would not then be tolerated, and the business of the country would be conducted upon business principles by men of the highest order of executive ability, broadest information and sterling integrity.

The lawyer is trained to question, combat or defend every statement, to speak against time, for no other purpose than to weary his opponents and defeat measures regardless of their merits.

The lawyer, as a general rule, does not refuse a retainer when his knowledge or experience has gained for himself a reputation, especially when his influence or services are in demand. And when he goes into politics he carries with him all the privileges accorded him in his profession, hence the naturalness of these legal gentlemen aspiring to the high position of Congressmen.

If our great industries were equally represented in Congress it would be utterly impossible for them to be paralyzed as they have been for the past three years. The tariff and finance should never become a party question, for the varied interests should receive due consideration and a common-sense compromise acceptable to the largest number and conservative of the most important interests would be effected. These most vital questions of any nation would be settled and not be subject to change with every change in the administration, or would but undergo such slight modifications from time to time as circumstances might make necessary, and thus the ever-recurring depression in business and the consequent fearful distress, suffering and ruin would be impossible.

If the representative men in the various avocations could be represented in Congress immigration would also receive that wholesome check which would be a boon to our citizens as a whole, and especially to our common laborers and artisans. No true American who has the interest of his fellow-countrymen at heart could wish for one moment that our workingmen should be paid such wages as prevail in Europe. The aim would be to stop the immigration of the worthless class, to elevate those we would have among us and to give us a country as nearly free from paupers as possible.

The great conflict which has been agitating the minds of this nation has terminated as it should, by the voice of the people. It should now be the highest ambition of every true man to do his whole duty by throwing his influence with the mass, and restoring, as far as possible, that confidence which is already being so perceptibly felt in the various lines of trade.

One of the saddest features of the late campaign was the arraignment of capital against labor, both of which possess inalienable rights, and which must be recognized by each. It is a dangerous thing to stir up strife between labor and capital, as it is fraught with fearful results, and dire conflict and disaster must be the outcome; but, on the other hand, the aim should be to cement them together, for they are inseparable.

#### THE POWER OF PUBLIC SPIRIT.

How It is Turning a Defeat into a Victory.

[Special Cor. Manufacturers' Record.]

Sedalia, Mo., December 7.

Some months ago the city of Sedalia decided to make an effort to become the capital of the State of Missouri, and began an agitation which led to the submission to the people at the November election of a capital-removal proposition. The citizens had signed a bond to contribute about \$800,000 for the erection of new public buildings if the people should vote to change the seat of government from Jefferson City to Sedalia. An active and exciting canvass was inaugurated, which in this State was scarcely less interesting than the presidential issue itself. Sedalia spent a good many thousands of dollars and Jefferson City spent a good many thousands, but Jefferson City won.

Now one of the results of this campaign for capital removal was to awaken that elixir of municipal life known as "public spirit" as it had never been awakened before, both at Sedalia and at Jefferson City, and "public spirit," when once thoroughly aroused, can't be kept down. It must and will maintain a state of activity of some kind, and if properly led and directed one or two defeats only serve to stimulate and invigorate it, strengthening its power and developing its resource.

At Sedalia, as I found out by a visit to this lovely mid-Missouri city, it is exercising its energies, now that it has failed in one effort, in another of even greater real value to substantial progress and prosperity, and this is in behalf of industrial extension. Having failed to get an official pay-roll, it is now working for factory pay-rools, which maintain not a transitory political population, but a permanent one, imbued with local pride and civic patriotism, a population which invests its savings where they are earned.

This movement is directed by a board of trade, which corresponds with the "commercial clubs" and "business leagues" which are doing so much at many points in the Southwest, for instance at Fort Smith, Ark., as recently told in the Manufacturers' Record, for the development of Southern and Southwestern towns and cities. The active executive officer of this organization is its secretary, Mr. R. H. Gray, who is one of the most clear-headed and wide-awake men that I have run across in this sort of work.

At present he is endeavoring to secure the diversion of the large sum originally subscribed for new State buildings to the making of Sedalia the Dayton of Missouri. The first step in this direction is to be the expansion of certain industries already established, and later on invitations will be given to outside factories to investigate Sedalia's advantages as a manufacturing centre. And so what

seemed a defeat will be turned into a victory.

From an investigation of the feeling which is manifesting itself all over Southwest Missouri—at Springfield, Joplin and just across the line at Pittsburg in Kansas—this movement for insuring prosperity by locating factories is about to take a shape that will result in a new and better state of things than has yet been manifested in this favored section of a favored State.

THOMAS P. GRASTY.

#### THE NICARAGUA CANAL.

Mr. NIMMO Makes an Appeal for a Thorough Governmental Investigation of Its Commercial and Military Aspects.

*Editor Manufacturers' Record:*

In your issue of July 3 there appeared an article on the proposed Nicaragua canal by Capt. Wm. L. Merry, of San Francisco, an enthusiastic advocate of that scheme. This article in its references to myself is vituperative. I cannot possibly reply in that strain. Captain Merry presents no fact, however, in the line of proof that the proposed canal is justified by either commercial or military requirements. This I regret, for the discussion of commercial and economic questions is always a source of pleasure to me. I will, however, volunteer something in that direction.

The present status of the Nicaragua canal project, as a matter of congressional concernment, is as follows:

First—The Congress of the United States has never yet instituted an investigation in regard to the commercial importance of the proposed canal.

Second—The Congress of the United States has never yet instituted an investigation in regard to the military aspects of the proposed canal.

Third—The Congress of the United States has, within the year last past, caused an investigation to be made by a board of eminent civil and military engineers as to the engineering features of the proposed Nicaragua canal. That board has found that the engineering plans and estimates of the Maritime Canal Co., of Nicaragua, are marked by inaccuracies, glaring omissions and other defects, which lead to the conclusion that such plans and estimates constitute an unreliable basis for legislative action. Accordingly, the Nicaragua canal board has recommended a new and more thorough survey than was possible under the provisions of law limiting its inquiries.

Fourth—The proponents of the Nicaragua canal have not only failed to ask any governmental verification of their statements, but they have strenuously opposed all propositions in favor of instituting official inquiry as to the commercial, military or engineering aspects of the scheme. They have also maligned the members of the late Nicaragua canal board and others who have advocated the thorough investigation of their project, at the same time strenuously endeavoring to induce Congress to accept their own representations without question.

Fifth—The only official report of the government as to the commercial possibilities of the Nicaragua canal shows it to be impracticable.

Sixth—The Maritime Canal Co., of Nicaragua, is bankrupt. It has failed in its strenuous efforts to raise money, both in this country and in Europe, and for the reason that its proponents and managers have been unable to convince financiers of the feasibility or commercial value of their project. In the desperation of failure the canal company has turned to the government of the United States

for the repairment of its fortunes and the recoupment of its losses.

In the year 1880, in my then official capacity as chief of the bureau of statistics of the Treasury Department, I prepared a statement showing the commercial possibilities of the proposed Panama canal. My report upon the subject, made under the authority of the Secretary of the Treasury, and not of Congress, is dated August 7, 1880. It is the result of a careful investigation, to which I devoted about six months of my time, under exceedingly favorable conditions as to means of securing information. I did not confine my attention to the Panama canal, but reported generally upon the commercial possibilities of "An American Inter-oceanic Canal," without regard to its location. My conclusions were therefore quite as applicable to the Nicaragua canal as to the Panama canal.

Although all matters in doubt were thrown in favor of the canal route, I found that not more than 1,625,000 tons of shipping could be expected to pass through it annually. No other official computation as to the tonnage of the proposed canal has ever been made by the government of the United States or by any other government. Since that time several new transcontinental railroad lines have been constructed, and their rates for transportation have been reduced more than one-half. This has greatly reduced the possible tonnage of the proposed canal.

In a recent pamphlet and in an article which appeared in the Forum for March, 1896, I have clearly shown that if the Nicaragua canal were now completed it could not secure much over 300,000 tons of shipping annually. It is my firm belief that a thorough and impartial official investigation under the authority of Congress would verify this conclusion. On the other hand, the proponents of the Nicaragua canal declare that it could secure from 7,000,000 to 8,000,000 tons annually. But the fact has been exposed that their estimates are based upon absurd assumptions and an utterly unphilosophical method of computation. All this would readily appear as the result of an official investigation, the only safe basis of legislative action in regard to subjects of this character.

The administrative government of the United States is fully equipped for inquiries such as that here recommended. The bureau of statistics of the State Department, the bureau of statistics and the bureau of navigation of the Treasury Department and the interstate commerce commission can furnish all the information required for such an investigation. For the Nicaragua canal people not only to neglect to subject their estimate of tonnage to such tests, but obstinately to refuse to do so when challenged to the issue, constitutes the strongest possible presumptive evidence of the unworthiness of their scheme.

The whole question as to the possible tonnage of the Nicaragua canal is subject to a crucial test. The four principal sources of tonnage for the proposed canal are the Asiatic commerce of the Atlantic and Gulf ports of the United States, the commerce of the Pacific coast States with Europe, the commerce of the Pacific coast States with the States east of the Rocky mountains, and the commerce of the western coast of Central and South America with countries bordering on the Atlantic ocean. The total tonnage from these four sources is approximately as follows: Asiatic commerce, 54,000 tons; commerce of Pacific coast States with Europe, 6000 tons; commerce between Atlantic and Pacific ports of the United States, 150,000 tons; commerce of the western coast of Central and South America, 100,000 tons; total, 310,000 tons.

The advocates of the Nicaragua canal

have refused to discuss this statement of tonnage.

The cost of transporting wheat from California to Europe by sailing vessels during the year 1895 was about \$5 a ton of 2240 pounds. The expense of passing vessels through the Nicaragua canal, upon the basis of 4 per cent. on Colonel Ludlow's estimated cost of \$150,000,000 and of \$1,400,000 for administration, operation and maintenance, would be for an estimated tonnage of 400,000 tons annually about \$18.50 per ton. In a word, the cost of the Nicaragua canal passage, in order to meet its expenses, would amount to about three times the entire cost of the transportation of wheat by the Cape Horn route, making due allowance for the numerical difference between the ship ton and the ton of weight.

Much is predicated by the proponents of the Nicaragua canal upon a probable change from sailing to steam vessels. Such change is undoubtedly taking place, but, on the other hand, there is a constant tendency to a diversion of traffic over the thirteen transcontinental railroads completed or in course of construction in South America, in Central America and in the United States, as the result of falling rates. I most sincerely hope that the subject in this and in every other aspect may be subjected to a rigid and impartial investigation.

The question as to whether the Nicaragua canal would or would not be available for sailing vessels has been sharply debated. Much has been made of the fact that in a recent article I quoted only a part of what the renowned Lieutenant Maury said upon this subject. I quoted all that at the time I had seen of his reference to the subject. But the controversy is merely one over words. Lieutenant Maury never said that it is impossible for a sailing vessel to reach and depart from the Isthmus of Panama, and I have never said that it is impossible for a sailing vessel to reach and depart from either terminus of the Nicaragua canal without the aid of a steam vessel.

What I have said and steadfastly maintain is that, in a commercial sense, it is impracticable to navigate sailing vessels through the proposed Nicaragua canal. To be more definite, I maintain that the cost of passing a sailing vessel through the proposed canal, including the expenses incident to delays in approaching and leaving its termini and the cost of towing sailing vessels through it, would amount to much more than the cost of moving a vessel over the longer open-sea route around Cape Horn. As in the case of the Suez canal, sailing vessels would, for the reasons just mentioned, be absolutely shut out from the Nicaragua canal route.

Let it be remembered that Lieutenant Maury wrote upon this subject long before the work of construction was begun on the Suez canal or upon the transcontinental railroads, and that a larger amount of meteorological and nautical information has been collected since his day. It will be an easy matter for Congress to arrive at a clear determination of this vitally important question through an investigation conducted by officers of the naval observatory, the hydrographic office of the Navy Department, the weather bureau of the Agricultural Department and the bureau of navigation of the Treasury Department. To neglect such means of information at hand would be a clear dereliction of legislative duty.

The attempt to predicate the success of the Nicaragua canal upon the success of the Suez canal is glaringly absurd. This is evident from the following considerations: The Suez canal is a sea-level canal, whereas the Nicaragua canal would require 220 feet of lockage and involve heroic engineering problems; the Suez

canal connects great commercial nations, whereas the possible commerce of the Nicaragua canal is greatly inferior; the Suez canal route has excellent and conveniently located coaling facilities along its entire extent, whereas the broad Pacific affords no such facilities for the Nicaragua route. But in an economic and commercial sense, the most important difference between the Suez and Nicaragua canal routes consists in the fact that the Suez canal has no railroad competitor; whereas the Nicaragua canal, when completed, would have six railroad competitors in this country, each one of which is only about half the length of the canal route from the Atlantic to the Pacific seaports of the United States. These railroads absolutely and for all time command the carriage of passengers, of bullion, of the mails, of express goods and of higher-classed and perishable freights, leaving to Nicaragua canal competition only the lower-classed freights, for the carriage of which the railroads would strenuously compete. This latter statement is clearly illustrated by the fact that 80 per cent. of the canned goods of the Pacific coast are now shipped east by rail, although such freights are carried not only by the Panama route, but also by the Cape Horn route in sailing vessels, a cheaper mode of transportation than would be supplied by the Nicaraguan canal. It is also a fact beyond all controversy that from 95 to 98 per cent. of the products of California shipped to the States east of the Sierra Nevada range are shipped by rail. The principal part of such shipments are to points east of the Rockies and west of the Alleghany mountains, for it is remembered that the centre of the population of the United States is not far east of the meridian of Chicago.

The most important fact in this whole discussion is that by virtue of shorter distance, superior coaling facilities and no lockage, the Suez canal affords a route greatly superior to the Nicaragua canal route for the commerce of Asia and Australia, not only with Europe, but with all ports on the eastern side of the United States. This, to my mind, is the keynote to the whole subject.

The attempt to predicate the success of the Nicaragua canal upon the growth of commerce upon the great lakes along our northern border is even more absurd than that of attempting to predicate its success upon the results realized on the Suez canal route. This also could be clearly established by a thorough commercial investigation such as I have suggested. The Suez canal and the Sault Saint Marie canal have been successful, but there are canals and canals. The Corinth canal of Greece and the Liverpool and Manchester canal of England, enormously expensive works, are failures. They cannot meet the competition of alternative routes. The Kiel canal of Germany also is securing only about one-sixth of the tonnage predicted for it by its proponents.

The whole idea that the commercial and industrial interests of the Pacific coast are to be greatly benefited by Nicaragua canal competition is, in my belief, utterly fallacious, for reasons of a commercial and economic character, which I have elsewhere explained at length. Let the people of the Pacific coast think again upon this great question, and think soberly.

I am forced to believe that the Western and Northwestern States have been deluded as to the asserted importance of the Nicaragua canal. Chicago is the great centre of commerce for the products of the Pacific coast, and the transcontinental railroads are the avenues of that commerce. This trade is very largely with points in the interior of the States

of California, Oregon and Washington. Is it within the bounds of reason to suppose that Chicago and other Western cities are to be benefited by lines of transportation extending from interior points in the Pacific coast States to Pacific seaports, thence by sea and Nicaragua canal to Atlantic and Gulf ports, and thence by rail to Chicago, St. Louis and other commercial centres in the Western and Northwestern States? To the extent of its efficiency the Nicaragua canal route would obviously tend to divert commerce from Chicago and other Western commercial centres. But that influence would be too small and ineffectual to injure Western cities or to benefit our Atlantic and Gulf ports. The whole country would, however, be burdened with the taxation involved in the construction of that unnecessary work, and by the enormous cost of maintaining it. All this is matter for a thorough investigation under the authority of Congress. The light which such an inquiry would throw upon the merits of the Nicaragua canal project would also be of great value in illuminating the legislative mind as to the force of commercial and economic conditions which have been evolved during the last thirty years. One result of such knowledge would be to convince legislators and the people generally that the railroad has become the most efficient and the most important avenue of commerce. One good transcontinental railroad is worth half a dozen isthmian canals.

The absurdity of assuming that the Nicaraguan canal would be of any military importance in time of war is indicated by the assertion of a member of the Nicaragua canal board that the proper thing to do with it in case of a foreign war would be to blow up one of its locks and thus render it useless. This would be the inevitable alternative to an occupation of the adjoining territory in Nicaragua and Costa Rica by the land forces of the United States for the protection of the canal, an expedient which is too absurd for serious consideration.

One of the most absurd ideas promulgated by the proponents of the Nicaragua canal is that Lake Nicaragua would become a great naval rendezvous. This would involve military occupation of the adjacent territory, as well as enormous military works and great fleets at either terminus of the canal, for the elementary principles of military science regarding the location of naval rendezvous or base of supplies demand, first, absolute protection on the land side, and second, an impregnable outlet to the sea. It is difficult to imagine a more senseless waste of military power than would be involved in a naval rendezvous on Lake Nicaragua. It is the conception of civilians and not of military men. Besides, it is sustained by no adequate commercial object to be subserved. It would be the climax of folly to commit the government of the United States to the construction of the Nicaragua canal upon the ground of its assumed military importance, in the absence of a thorough investigation of its military character by a properly constituted military board, especially in view of the fact that the United States has in its army and navy men of the highest ability, who are distinguished for their knowledge of military affairs.

It would be presumptuous in me to enlarge upon the importance of a thorough investigation of the engineering aspects of the Nicaragua canal scheme, in the light of the valuable information and distinct recommendations of the distinguished board of engineers which has recently reported upon the subject. That this recommendation will eventually be heeded by Congress I cannot doubt. The discussion of commercial problems con-

stitutes a part of the legislative function, but military and engineering problems are of too scientific and technical a character for legislative determination. They must be left to the decision of technical tribunals. The attempt to forestall investigations as to the military and engineering features of the Nicaragua canal project by the strident utterances of men unlearned in the military and engineering professions constitutes one of the most glaring vagaries of the Nicaragua canal propaganda.

This controversy between the advocates of the Nicaragua canal and myself as to the practicability of the scheme has been going on long enough. I call for the question, and it can be decided only by an impartial official investigation under the authority of the national government.

It is high time for the proponents of the Nicaragua canal project to abandon the policy of opposing every proposition to investigate the commercial, military and engineering aspects of their undertaking, and of attempting to cast obloquy upon persons who seek to secure such investigation in the cause of truth and judicious legislation.

Again I earnestly plead for a thorough investigation of the commercial, meteorological, military and engineering conditions involved in the construction of the proposed Nicaragua canal before the government of the United States shall embark in its construction. A refusal to institute such investigation in advance of appropriating money out of the public treasury, or of extending the credit of the government in aid of the scheme, would be an affront to the intelligence of the age in which we live, and discreditable to this great and enlightened nation, and I doubt not that it would eventuate in a disgraceful national disaster.

It would be folly for Captain Merry and me to contend over this subject in an acrimonious way. Our raillery would not be to the public edification. Besides, our opinions in regard to the value of the proposed Nicaragua canal will never be regarded as the conclusion of the whole matter. The best service which we can render to the State of California and the whole country will be to unite in asking the Congress of the United States to institute a thorough investigation of the whole question in all its bearings.

In conclusion, Mr. Editor, will you allow me to ask of you the favor that you will entreat the proponents of the Nicaragua canal to join me in asking Congress to institute the investigation which I have just indicated, or, at least, will you do me the favor to ask those gentlemen to desist from their efforts to prevent Congress from heeding my earnest appeal in favor of such investigation?

JOSEPH NIMMO, Jr.

#### A Submarine Boat

What is known as the Lake Submarine Co. has been organized at Baltimore to build a vessel which will move under water. It is to be propelled while under water by electric motors operated on the storage-battery system. The company expects to do an extensive wrecking business and to recover cargoes from sunken vessels. The Columbian Iron Works, which is now filling a government contract for submarine torpedo boats, will build an experimental vessel for the Lake Company of fifty-four tons. The inventor of the boat is Simon Lake, of Baltimore.

A convention in the interest of good roads will open at Orlando, Fla., on February 22. Governor Mitchell has taken an active interest in the gathering, as well as the mayor of Orlando. Invitations have been sent to persons throughout the country advocating good roads.

#### FUTURE OF AMERICAN MANUFACTURERS.

Address by Mr. Theodore C. Search, President of the National Association of Manufacturers.

A year ago the Manufacturers' Record presented to the National Association of Manufacturers at its Chicago meeting a paper reviewing the marvelous industrial progress of the United States, and showing why the magnitude of our industrial interests made advisable the creation by Congress of a Department of Manufactures and Commerce. Somewhat along the same line of thought, but presenting the statistics of progress from a different standpoint, Mr. Theodore C. Search, the president of the National Association of Manufacturers, recently addressed the Pittsburgh Chamber of Commerce. In his most admirable speech upon "The Future of American Manufacturers," Mr. Search said in part:

"The industrial growth of the United States has been without a parallel in the world's history. In its amazing rapidity, its conditions, the means of development and in the marvelous results which have been obtained there is nothing to which the growth of our industries can be compared. We have cut loose from the traditions of the older nations, we have been unhampered by any precedents, and in dealing with entirely new conditions which have been encountered in this country we have reached a condition of pre-eminence by methods all our own. There is hardly an industry that has been transplanted to this country that has not soon been able to give new ideas and new methods to the world, and many of our great industries are the creation of conditions peculiar to this country. It is no vain boast to say that America has been the largest contributor to the industrial history of the world, not only in ideas, but in results.

"With abundant stores of raw material for every industry, with a natural ingenuity equal to every emergency, and with a protective system which has systematically fostered industrial development, the people of the United States have accomplished more in two generations than their most formidable competitors have done in centuries.

"No figures can tell the whole story of our industrial growth. If we measure the progress of manufacturing by the increase in the total value of the products, we still fall far short of the truth, owing to the continuous decline in all values. A thousand dollars' worth of pig iron represents today three times as many tons as could be bought for the same sum twenty-five years ago, and corresponding changes have taken place in other industries. Measuring our industrial progress even by the imperfect standard which values afford, the showing is astonishing. In 1840 the product of all our industries amounted to only \$500,000,000 in value, about equal to the output of the iron and steel industries of today. In 1850 the value of all manufactured products was \$1,019,000,000, and in 1860 it was \$1,885,000,000. Then came the enormous industrial development under the stimulus of the war tariffs, and by 1870 the product of all our manufactures was reckoned at \$4,232,000,000. Another ten years brought the total up to \$5,369,000,000, and then came the period of greatest activity this country has ever known, which gave us in 1890 an output of \$9,372,000,000 as the product of all our industries.

In fifty years the population of the United States increased from 17,000,000 to nearly 63,000,000, or about three and two-thirds times. In the same time the product of our industries grew from \$500,000,000 in value to nearly \$10,000,000,000, an increase of twentyfold.

"Our industrial progress of the past half-century can be shown in simpler form, and even more strikingly. In 1840 the products of our manufacturing establishments amounted to \$30 for every man, woman and child in the United States; in 1850 the product was \$44 per capita; in 1860, \$60; in 1870, \$110; in 1880, \$107, and in 1890, \$148. If it were possible to measure the output of our manufacturing industries by a more fixed and definite unit than the dollar, it could be shown that the industrial progress of the United States has been far greater in the past half-century than is indicated by the figures I have given. We know this from the statistics of those industries whose products we are able to measure by quantity rather than value, such as iron and steel, cotton and woolen goods, lumber, etc.

"What has taken place within the knowledge of the present generation has made the United States the foremost industrial nation of the world, not merely in quantity of product, but in skill, ability, ingenuity and command of methods and processes. In some branches of industry we have yet much to learn from our competitors abroad; in other departments of manufactures we are teachers rather than learners. As an industrial nation, however, we need acknowledge no leadership.

"According to Mulhall, we lead the world in our productive power. He figures that the aggregate of all the energies in use in the United States in 1890 was equal to 1940 foot tons per capita, while the position of other nations was as follows:

	Foot tons.
England	1470
Germany	902
France	910
Spain	590
Austria	560
Italy	380

"This comparison may be simplified by reducing it to percentages. Taking the productive capacity of the United States as 100, the relative position of the other countries is as follows:

	Per cent.
England	70
Germany	46½
France	47
Spain	30
Austria	29
Italy	20

"From this it will be seen that we produce per capita one and three-sevenths times as much as England, two and one-tenth times as much as Germany or France, three and one-third times as much as Spain or Austria and five times as much as Italy.

"These figures have a deeper significance than a superficial glance would show, as they indicate that our country is a productive factor that cannot be much longer confined to its own limits for trade; that the higher wages of our labor is being rapidly discounted by the effectiveness of our methods, and that the markets of the world are not so far from our grasp as many imagine.

"The protective system has given us the highest paid labor in the world. We are rapidly demonstrating, however, that it is possible to overcome the higher wage-earnings of our labor by a greater product, and that it pays to maintain the splendid efficiency of our workmen for the sake of its greater value. That it has been possible to maintain the wages of our labor in the face of continually-declining prices of nearly all products has been due to the constantly-increasing productive capacity of our workmen and our machinery. The substitution of science for rule of thumb has also contributed to the accomplishment of the same results. In no industries have these conditions been so marked as in those with which

you are the most familiar here in Pittsburgh.

"In the manufacture of iron and steel there has been a wonderful increase in the productive capacity of labor through the introduction of better methods and more efficient machinery. The production of pig iron in the census year 1870 averaged about fifty-three gross tons for each man employed in the industry; in 1880 it was about eighty-one tons, and in 1890 about 321 tons. Twenty years ago, in 1876, the average annual capacity of each glass furnace was only 6311 gross tons, while at present the average is about 37,000 tons, so that while the total number of blast furnaces has decreased from 713 in 1876 to 469 at the beginning of this year, their annual productive capacity has increased during the same time from 4,874,312 gross tons to 17,373,637 tons. In the last four years the number of Bessemer converters has increased only from ninety-five to ninety-nine, yet the productive capacity has grown from 5,857,143 gross tons in 1892 to 9,472,350 tons at the beginning of this year. In 1884 the average daily output of coal for each man employed in the bituminous mines of Pennsylvania was 2.18 tons, while in 1894 3.22 tons, and during the same ten years the output of anthracite increased from 1.70 tons to 2.07 tons per man per day.

"Similar conditions of increasing productive capacity may be found in nearly every important industry, and to this influence more than to anything else is due our ability to produce some goods as cheaply as our competitors abroad, who pay their labor half the wages our workmen receive, or perhaps less.

"No factor has been so powerful as the protective tariff in our industrial development. Protection has stimulated our manufacturers as nothing else could have done, and without the help which has come from the protective tariff such progress as we have seen in the past quarter of a century would have been impossible of accomplishment within that time, if at all. Had it not been for protection we would still have been dependent upon Great Britain, Germany, France and Belgium for the bulk of the manufactured articles which are matters of necessity or luxury for us.

"Unquestionably the protective system has been the most important factor in our national prosperity, for it has made us a nation of producers, and to a very large extent independent of the competition of the world.

"That some of our great industries have grown under the fostering care of the protective tariff until they have nothing to fear from foreign competition is frequently seized by theorists as a reason for the abandonment of the protective system. This is wrong. I am firmly convinced that so long as we aim to be a great manufacturing people, protection to the home industry must continue to be a recognized and active principle in our national government. Because some of our industries are strong does not in any manner lessen the need for protection for the weak. I must say that I cannot respect the views or the conduct of those men who owe to protection all they have, and yet now turn against the system which gave them success and seek to deny its advantages to those who need aid for their struggling industries.

"I have spoken only of the past and present of our industries. What I would like to say of the future is suggestive, rather than prophetic. Future possibilities lie in the direction of a more complete control of the home market and a larger development of our export trade. Notwithstanding the enormous development in our manufactures and the evils of

overproduction which constantly disturb the equilibrium of many important industries, we are still far from supplying all our own needs, for we buy larger and larger quantities of merchandise abroad each year. As a matter of fact, the consumption of foreign products in the United States has been increasing for over half a century, not only in the aggregate, but in the quantity per capita. In 1830, when our use of foreign goods was smallest, the imports into the United States amounted to \$4.39 for every man, woman and child in the country. There was a steady increase in this proportion until it reached \$12.51 in 1880, and it had fallen to \$10.48 per capita in 1895, which still was nearly two and one-half times the rate of imports sixty-five years ago. During the fiscal year just ended the total imports into the United States amounted to nearly \$780,000,000, of which over \$333,000,000 represented the value of articles wholly or partly manufactured, and articles of luxury, etc. Does not this show that there are possibilities in the home market which we have not yet reached? When we, the people of the United States, buy abroad in a single year \$32,000,000 worth of cotton goods, \$10,000,000 of crockery, \$48,000,000 of drugs and chemicals, \$27,000,000 of flax and jute goods, \$7,000,000 of glass and glassware, \$25,000,000 of iron and steel products, \$26,000,000 of silks and \$10,000,000 of woolen goods, can it be said that we have exhausted the possibilities of the home market, and that the only salvation of our industries is an expansion of our foreign trade? I think not. Clearly, then, the first need of our manufacturers is for conditions which shall enable them to make in this country the many millions of dollars' worth of goods which are now purchased abroad. There is need for the adjustment of our tariff laws in such manner as to give to our manufacturers protection sufficient to induce the production in this country of the goods now made abroad. It is evident that there are some weak points in our protective system, for our industrial development has not been altogether symmetrical, for while some branches of manufacture have reached the stage of disastrous overproduction, others are suffering equally serious results from the competition of foreign manufacturers.

"With the further development of our manufactures the importance of our export trade will increase, and will present itself to an ever-increasing proportion of our manufacturers. Every condition seems to indicate that in years to come American industry and commerce will achieve as notable victories in the markets of the outer world as have been won at home. As we now lead the world in our exports of the products of agriculture, so we shall just as surely acquire an equal pre-eminence for our foreign trade in the products of our factories.

"Our exports of manufactured goods have grown enormously in the past quarter of a century—from over \$126,000,000 in 1870 to \$228,000,000 in 1895. In 1870 less than 14 per cent. of our exports consisted of manufactured articles, but last year the share was 26.47 per cent. But there are many long steps to be taken before we shall be able to point to an export trade in our manufactured products that will be properly proportioned to our greatness as an industrial nation. We send abroad, say, \$228,000,000 worth of manufactured articles in a year, but that falls about \$50,000,000 short of England's export of cotton yarns and cloths alone. Interest in all that pertains to the extension of our foreign trade was probably never more general or more earnest than it has been during the present year, and the numerous movements designed to pro-

mote our foreign commerce are deeply significant of the desires and aims of manufacturers and merchants.

"While on the subject of tariff protection, let me mention briefly one feature of protective legislation which has long been neglected, but which now must have our serious and earnest attention. I refer to the need of legislation which shall give to the builders and owners of American vessels the same protection which has been given to our productive industries. In all these years of tariff protection of our manufacturers our merchant marine has been without protection from the more cheaply built and more economically operated shipping of other countries. The protection which has developed the industries of our nation has left our shipping wholly unguarded from foreign competition, and the period of growth and prosperity for our industries has been a time of hardship and decline for our merchant marine.

"In fifty years our foreign commerce has increased from \$227,000,000 to \$1,662,000,000, but the total tonnage of our merchant marine engaged in foreign trade has decreased in the same time from 1,047,454 tons to 822,347 tons. With nearly eight times the foreign commerce we had half a century ago, we have now only four-fifths of the ocean-carrying tonnage we had then.

"The productive industries of the United States far exceed in importance all other interests in which capital is invested, yet our commerce and industries have no representation in the national Cabinet. Agriculture has its department and its secretary, and justice, as well as business principles, demand that commerce and manufactures shall have their Cabinet representatives. The creation of this new governmental agency would be of inestimable value to the business interests of the nation, and would afford much-needed relief to existing departments already overcrowded with unrelated bureaus. Bills providing for the establishment of the new federal department are now pending in Congress, and are being actively supported by the National Association of Manufacturers and other business organizations, and I am glad to know that your own Chamber of Commerce has already given its early endorsement to this movement."

#### THE SEEDS ARE SPROUTING.

##### A Cheerful Story of Growing Confidence and the Bright Outlook for the Southwest.

[Special Cor. Manufacturers' Record.]

St. Louis, Mo., December 14.

There are a few people—let us be thankful that there are but a few—who keep up the calamity cry and refuse to see what is comforting or cheering today or any augury of better things tomorrow. The way these people feel has been likened unto the disappointment of children who dig up at night seeds planted that morning to see if they haven't begun to sprout.

To all, however, but those who are blind because they will not see, there are abundant evidences that the seeds of confidence—the forerunner of prosperity—have not only sprouted, but are coming up.

I had a talk today here in St. Louis with Mr. Breckinridge Jones, who is one of the active managers and vice-presidents of the Mississippi Valley Trust Co., an institution with \$1,000,000 of paid-up capital and a large surplus, and he said that far from the present soundness of the situation—the existing financial health of the country—being a source of disappointment to those who had pinned their faith to a victory for sound money, everything pointed to an era of broader

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done in that section, yet the fact that coal is so cheap—"slack" for steam purposes selling down to forty cents a ton—coupled with the abundance of cheap raw material for lead works, galvanized-iron works, brass works and the like, will soon make Pittsburg a very important manufacturing city.

He thinks, too, that the inevitable early development of that great untouched area—rich in minerals and in its soil and in hardwood timber—which lies south of Springfield, Mo., will soon give to that plateau city a new impetus in trade and industry.

"Nowhere in the world," said Mr. Hobart, "is there such amazing mineral wealth as in this vast railroadless region south of Springfield, reaching to and beyond the White river, in Arkansas, and the first railway that penetrates it will be one of the most profitable which it is now possible to build anywhere in the United States. It is in easy reach of various existing lines, one or the other of which must build a branch into it very soon, or its resources will tempt capital to build a new line and seize territory that has been too long neglected."

"I know," said he, "of one company which owns a large body of zinc land in Marion county, Arkansas, which will enter into a contract for a term of years to give the first railroad that comes a minimum of twelve carloads of freight a day." Mr. Hobart has promised to give me the material for a series of articles on this very inviting terra incognita, which he expresses the belief will have its day of development hastened by the special attention which the Manufacturers' Record will devote to the empire embraced in a parallelogram whose north line may be said to extend from St. Louis to Kansas City, its west line from Kansas City to the Rio Grande, its south line the Gulf shore and its east line the Mississippi river.

#### THE PORT ARTHUR ROUTE.

I clip from today's *Globe-Democrat* the following, quoting even the headline:

#### "WESTERN LINES ALARMED."

"Special Dispatch to the *Globe-Democrat*.  
"Chicago, Ill., December 11.—Western railroad managers are much disturbed over the diversion of freight traffic from trans-Missouri territory to the Gulf ports. It is admitted the completion of the Kansas City, Pittsburg & Gulf road to Port Arthur, Texas, next spring, will greatly aggravate the situation. The new Pittsburg & Gulf is entirely independent, and is in no way identified with any of the roads east of the Missouri river. It can afford to make lower rates than any of the existing lines, because its principal object is to build up Port Arthur, in which its promoters mean to make good any losses that may come from the transportation of freight at unprofitable rates. There remains no hope for the Missouri river roads competing against the Gulf lines during the winter months. A prominent Western traffic official said today not a bushel of grain from Kansas points is now being shipped to or via Chicago, and much of the Nebraska grain is also being shipped to the Gulf.

"The only hope Western roads have to regain some of the trans-Missouri export grain traffic is that the large ocean steamers will find it unprofitable to run to the Gulf ports on account of the great distance, and the increased risk of going through the Florida keys."

While most of the facts stated in the foregoing telegram are true, yet it is a mistake to say that "the principal object" of the Port Arthur route is to build up "Port Arthur." While Port Arthur will undoubtedly be rapidly developed into an important maritime city, yet Port Arthur is rather an incident than an end in the

calculations of the builders of this great air line from the mid-continent to the Gulf, whose legitimate earnings will probably make it a dividend-earner from the day it is opened. Moreover, I am justified, by virtue of information gotten at first hands, in saying that the "Port Arthur Route," as the Kansas City, Pittsburg & Gulf Railroad is popularly called, will not discriminate against either New Orleans or Galveston, but holding, as it will, the "coigne of vantage" in respect to export food products, it will be a boon to the commerce of each of those existing Gulf outlets, and is in a position to derive a large revenue through turning over freight to the Texas & Pacific at Shreveport, and to the Southern Pacific at Lake Charles for New Orleans and at Beaumont for Galveston.

The hope indulged by the Western roads, as expressed in the foregoing telegram from Chicago, is therefore utterly illusive, for large ships are now flocking to Galveston and New Orleans, and will be found flocking to Port Arthur (with its twenty-four and one-tenth feet of water in the pass at mean low tide) so soon as this road is finished and the docks and freight-handling facilities now under way are ready for use.

THOMAS P. GRASTY.

#### Industrial News from Birmingham.

[Special Cor. Manufacturers' Record.]

Birmingham, Ala., December 15.

The past week has been a very quiet one in iron circles, presenting no features that invite special comment. Domestic inquiry has been small, and transactions insignificant. The production is unabated, but the shipments continue on such a scale that stocks continue to be reported as diminishing. Quotations are held firm at \$8.25 for No. 1 foundry, \$7.75 for No. 2 foundry, \$8 for No. 1 soft, \$7.75 for No. 2 soft and \$7 for gray forge and mottled. On these figures all interests seem agreed, and there has nothing leaked out to indicate any shading of prices. The export inquiry has been very fair, and, comparing it with the domestic inquiry, it is of an encouraging character. Actual transactions for export during the week will approximate 2000 tons. Owing to the fact that while one of the prime factors in this trade is free with information concerning it, the other objects to any mention of it except in a very general and indefinite way, it is simply impossible for your correspondent to be exact in his figures. So far, the figures given in these letters have been practically correct. One feature in this trade of interest to the iron men is the freight rate. It may be a surprise to many to learn that iron can be shipped from here to Liverpool at less cost than from here to New York city and other United States North Atlantic ports. The rate from here to New York is \$3.75 per ton. The open rate to Liverpool the past week was \$3.19 and \$3.44. But the average rate on Liverpool shipments has not exceeded \$3, and it has frequently been under \$3. When freights that stiffen the vessel are not in plentiful offering, then iron is in request and the rate is in accordance with its desirability. Another effort is being made to interest capital in a large steel plant, to be capitalized at \$1,500,000. A party has been here looking over the ground and obtaining the necessary data. He has gone to New York to lay the matter before interested men of large means. Projects involving millions materialize only after careful deliberation and calculation, in which dollars and cents are the influential and ruling factors. The pro-

jectors of the print mill will hold a meeting here this week to perfect their plans and initiate arrangements for a commencement of operations. This is the industry upon which so much depends the early development of the industrial interests of this place. It will be the pioneer in its line, and an advertiser of vast benefit. Machinery for a large cooperage plant is in transit, and it will be put in operation as speedily as arrangements can be perfected. The rolling mills start their puddling mill this week, but that is no indication of a continuous run, as they start up and shut down as stocks need replenishing or get plethoric. Among the minor industries affairs will average "very quiet." All are at work. But a few of them have obtained some jobs that, "like straws showing the way the wind blows," encourage the hope, if not belief, that "things are mending." There have been a few transactions in coal and mineral lands that are significant because it has been so long since even an inquiry invited any attention to them. The immigration agents "are up and doing," with results scored that will be mentioned in next week's letter. Altogether, the outlook is such that to the thoughtful mind much encouragement is derived from it, and Birmingham, appreciating the good in store for her, can, with great good feeling, offer to the readers of the Manufacturers' Record "the compliments of the season."

J. M. K.

#### Literary Notes.

Harper's Bazar, issued December 26, will contain a story by Mary B. Sleight, entitled "A Pensioner of Hope," and "Every Day Physical Culture," a practical paper, by Eva Lovett.

"The Froggy Fair Book" is a charming conceit for juvenile readers. It is the outgrowth of a novel idea, and is worked out in a way to prove attractive to young minds. The author is Anthony J. Drexel Biddle, who has achieved a reputation for clever work in this direction. The book makes an acceptable Christmas number.

Special features of Harper's Weekly for December 26 will be: "A Sioux Indian Episode," by Col. Guy V. Henry, U. S. A., illustrated by R. F. Zogbaum; a paper by Timothy Pitkins on "Turkish Grievances—The Blood Tax," a double-page illustration by W. T. Smedley, entitled "A Plantation Christmas 'fore de War," a third paper on "Street Cleaning in Europe" (Berlin), by Col. George E. Waring, Jr., with illustrations, and an illustrated article by R. G. Skerrett on the "Torpedo Boats of the United States Navy."

Charming calendars have been published by E. P. Dutton & Co., New York city. Reflecting high artistic taste and bearing sentiments full of good cheer, they make a happy selection to send to one's friends as a souvenir of the holiday season. These calendars are artistic gems. Two of them—"Children of the Year" and "Flowers of the Year"—are exquisitely beautiful. The former has twelve sheets, one for each month, showing twelve pictures of children. The latter represents in its twelve sheets twelve full-page flower pictures.

Memorial Life of Victor Hugo, edited by Emile Blemont. 364 pages. Estes & Lausiat, Boston, Mass.

The story of the life of this celebrated author affords excellent opportunity to weave into entertaining narrative incidents, obstacles and triumphs with which his life was filled. An author whose

popularity knows no country, and a writer who has left a visible impress upon that type of literature, the novel, his personal history is full of interest. The compilation of this book has been done with creditable exactitude, and it sheds instructive light upon the actions, thoughts and influences which impelled this remarkable Frenchman.

The artistic publications gotten out by Raphael Tuck & Sons Co., 368 Broadway, New York city, are usually awaited with much interest. This season's productions again combine the beauty and richness which appeal to persons of artistic taste. Embracing literature of all classes, not only can the idea of art be fulfilled, but the literary preference as well be provided for in the publications brought out by this concern. Gift books of many varieties and of especial design, which are masterpieces of art in illustration, binding and typographical work, are among the catalogue list. Anecdotes for the children, verses for the lovers of poetry and gems of fiction are to be found.

The Yankees of the East. Two volumes. By William Elroy Curtis. Stone & Kimball, New York city, publishers.

Sketches of modern Japan form the basis of this book. With graphic coloring the customs and people are written about in an intensely interesting way. The writer does well to emphasize the picturesqueness of the land of fans and flowers. Furnishing, as it does, the strongest contrast within its own borders known to history between the old and the new civilization, there is a wealth of material for the analyst. In a clever and readable style the author introduces one to many sidelights upon these people. While somewhat historical, the book is prepared in a popular style, and the bright narrative dispels the usual dullness of historical data.

Prang's holiday publications appear this year in more attractive form than ever. Fetching examples in pictures are displayed. "Our Pilgrim Ancestors," which forms one group, is a happy conceit. Then there are views of famous bits of scenery, figures, landscapes, marine sunsets, religious locations and a long and varied list of art works, executed with remarkable fidelity and at prices that should broaden their popularity. Sumptuous calendars, with sentiments suitable to all tastes, are among the attractions. A handsome line of floral art books, fine water colors and outfitts for ambitious amateurs are shown in the catalogue of this concern. At their headquarters, in Boston, L. Prang & Co. have a noteworthy display of the extensive line of goods they handle.

Among the holiday publications suitable for Christmas remembrances, the artistic books, and what may be called booklets, issued by Raphael Tuck & Sons Co., New York, are worthy of the highest commendation. They seem to be even superior to the former Christmas publications of this noted house, and this is saying a great deal, for the beautiful cards and booklets of this concern have a world-wide reputation. A few of the most dainty beautiful works calculated to bring delight to every recipient at Christmas, or, for that matter, at any other time, are: "Stepping Stones," by Frances Ridley Havergal; "Grains of Gold," by Charlotte Murray; "This and My Good Wishes," from Shakespeare; "Look Up," by Ellen Elizabeth Buiyan and others; "Remembrance," by Oliver Wendell Holmes; "Forget Me Not," by Longfellow. Catalogues can be obtained direct from the Raphael Tuck & Sons

Co., New York, or their publications can be found in all leading book stores wherever holiday publications are handled.

In the opening paper of Harper's Magazine for January Poulney Bigelow will sum up the result of "Portuguese Progress in South Africa," showing how ineffectual a colonizer Portugal has been during four centuries of nominal possession, and how demoralizing has been her influence upon the blacks. For this paper R. Caton Woodville has made four spirited illustrations, including the frontispiece, from photographs taken by Mr. Bigelow. George du Maurier's "The Martian" will continue to increase in interest with the development of its hero, Barty Josselin, now become a young man with an ambition to be an artist. The scene will be shifted from London to Paris and Antwerp, and the story will include incidents that with slight changes might appear in an autobiography of the author.

**Daddy Jake.** By "Uncle Remus" (Joel Chandler Harris). The Century Co., New York city.

This is one of the books for which little ones will leave favorite toys and crowd around to hear of the strange and amusing feats performed by a creature of fiction. The author's name indicates that it is entertaining and calculated to make a useful addition to the nursery amusement resources. Of course, it should be found among the books of every Southern child, but then "Uncle Remus" is almost as well known and as well loved North as South, though possibly better understood in his own native land than elsewhere, for there is a certain flavor to his tales that is best appreciated by those long familiar with the good old "darky," found nowhere else on earth except as a product of the old Southern plantation days.

**Around the Hearthstone.** \$1.50.  
**Men Who Win.** \$1.25.

**Women Who Win.** \$1.25.

Thomas Nelson & Sons, Union Square, New York city, publishers.

These three books are of that wholesome style that makes the lover of humanity wish that their sentiments may be instilled in the hearts of all mankind. Peculiarly timely for the Christmas season, the boy or girl who is remembered with a copy of either of the last two will find ideals to follow calculated to stir up the best impulses. The first book abounds in good sense, based on experiences that make it a most useful piece of literature. To the head of the family it should prove a helpful acquisition. Delightful biographies, full of inspiration, are presented in the other two books. William M. Thayer, the author of all three, created a most favorable impression with his previous books, any one of which are of a character to do credit to the advanced thought and high purpose of the author.

#### Activity at Shreveport, La.

The extension of the Kansas City, Pittsburg & Gulf system into Shreveport, La., has been the cause of a decided increase in the commercial activity of that city. Real estate has enhanced in value, the city is increasing in population and new buildings are being erected in different parts of the town. The railroad company will make improvements in addition to the work it has already completed, which will disburse over \$100,000 in the city. A large depot is to be constructed on a tract of land acquired for the purpose from the local authorities. The machine shops recently completed are in operation and giving employment to a large number of hands.

## RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

#### To Sell the Northeastern.

According to a dispatch from Atlanta, the Northeastern Railroad of Georgia may be sold to parties interested in the proposed line between Chattanooga, Tenn., and Augusta. The Northeastern would form a link in this route of thirty-nine miles. A bill is pending in the Georgia legislature to sell the line for \$287,000.

#### Orders for Locomotives.

The improvement in business with the locomotive-construction plants of the country is another indication of the general industrial revival and the confidence in the future felt by transportation companies. The Baldwin Locomotive Works, according to a dispatch from Philadelphia, now has orders for over fifty engines, of which seven are for the Norfolk & Western and thirteen for Japan. Another order is for fifteen heavy freight engines for the Louisville & Nashville.

#### New Orleans & Western Extension.

The visit of several New York parties to Port Chalmette, La., has originated the report that the New Orleans & Western road and its terminals were to change hands. Vice-President Charles B. Van Nostrand, 36 Wall street, New York, in a letter to the Manufacturers' Record denies the report, and adds:

"The amount of business handled during the first three months of operation has demonstrated the advisability of further extensions, which are now being arranged for, and will be undertaken in the early spring."

#### A Southern Appointment.

The announcement is made that Frank S. Gannon, superintendent of the New York division of the Baltimore & Ohio, has been appointed third vice-president and general manager of the Southern Company. Mr. Gannon has been connected with some of the principal lines in the North, among them the New York, Susquehanna & Western, the Erie system and the Long Island road. He is a self-made railroad man, and has the reputation of being an energetic and thoroughly capable official.

#### K. C. P. & G. Branch to Hot Springs

A dispatch from Hot Springs, Ark., states that surveys have been commenced for the proposed branch of the Kansas City, Pittsburg & Gulf road from Mena station to Hot Springs. Several months ago the people of Hot Springs entered into negotiations with the railroad company to have a branch built, and made a proposition which was accepted, it is reported, by President Stilwell and his associates. The branch would be sixty-five miles long, and give Hot Springs and vicinity a connection with the coast and with Kansas City.

#### A Plant System Improvement

The plant Railway & Steamship Co. has decided to change the gage of its St. John's & Lake Eustis division from narrow to standard gage. Although the road is forty-eight miles long, it is expected to complete the work in twelve hours. The Plant system has a record for remarkably fast railroad building. Some time ago it altered the gage of its Sanford & St. Petersburg division, 152 miles long, in less than three days. The St. John's & Lake Eustis road is in the central part of Toledo. By the proposed change through train service can be extended to

the many winter resorts on the Lake Eustis branch.

#### NEW MILEAGE IN THE SOUTH.

#### Nearly 600 Miles of Railroad Completed During the Year 1896.

The record of railroad construction in the South for 1896, as compiled by the Manufacturers' Record, shows that the demand for increased transportation facilities has necessitated the building of nearly 600 miles of standard-gage road, while over thirty miles of railway for lumbering and other purposes have been also completed. All of the Southern States but one have increased in mileage, and the construction has been more generally distributed over the entire section than in the past, showing that the necessity for new lines is not confined to any particular part of the South.

While there has been a decrease in railroad building in Texas, Florida and Virginia, a notable increase has occurred in Mississippi, Georgia, Arkansas and Louisiana. Of course, the extension of the Kansas City, Pittsburg & Gulf in Arkansas, Louisiana and Texas, the completion of the Gulf & Ship Island, requiring fifty-four and one-half miles of new line in Mississippi, the completion of the Florida East Coast Line (sixty-seven miles) and the extensions of the Texas Midland in Texas, added largely to the new mileage, but much of it comes from the construction of short independent lines and branches, varying from ten to twenty-five miles in length.

The appended table shows the construction for the present year and the past four years. As will be noted, the record for 1896 is but about 100 miles less than in 1895, and but slightly less than in 1894:

	1892.	1893.	1894.	1895.	1896.
Maryland .....	17	12	9	8	17
Virginia .....	21	14	16	38 $\frac{1}{4}$	..
West Virginia .....	261	105	66	55	19
North Carolina .....	45	112	14	47 $\frac{1}{2}$	27
South Carolina .....	51	20	56	6	9
Georgia .....	81	171	82	57 $\frac{1}{2}$	67 $\frac{1}{2}$
Florida .....	157	208	63	105 $\frac{1}{2}$	80
Alabama .....	31	84	9	20	26
Mississippi .....	8	5	6	5	66 $\frac{1}{2}$
Louisiana .....	85	36	32	44	87 $\frac{1}{2}$
Texas .....	247	216	83	218	77 $\frac{1}{2}$
Arkansas .....	15	61	55	65	91 $\frac{1}{2}$
Tennessee .....	90	33	82	15	4 $\frac{1}{2}$
Kentucky .....	44	35	19	8	17
	1153	1112	593	692 $\frac{1}{2}$	590

#### IMPORTANT PROJECTS OF THE YEAR.

The more important projects under way or completed in the South aside from those already referred to, are as follows:

**Maryland**—Completion of the Queen Anne's road from Queenstown to the State line. To be finished to the Atlantic coast by May 1.

**North Carolina**—Aberdeen & West End extended to a connection with the Southern system, twenty-five miles of extension.

**Arkansas**—Building of Hoxie, Pocahontas & Northern, fifteen miles between towns mentioned, and extension of Southwestern Arkansas & Indian Territory from Antoine to Pike City.

**Alabama**—Completion of the Lafayette & Opelika road, twenty-two miles in all.

**Georgia**—Building of the South Georgia from Quitman to the Georgia Southern & Florida road, twenty-five miles, and extension of the Tifton & Northeastern from Tifton to Fitzgerald.

#### Chang's in the N. C & St. L Road.

At the annual meeting of the Nashville, Chattanooga & St. Louis Company, held in Nashville, the following board of directors were elected: James G. Aydelott, Tullahoma; E. L. Jordon, N. C. Collier, Murfreesboro; M. H. Smith, Louisville; Joseph E. Washington, Cedar Hill;

A. H. Robinson, E. C. Lewis, E. W. Cole, W. A. Goodwyn, J. B. Richardson, John Hill Ealin, W. L. Danley, E. W. Thompson, G. M. Fogg and John W. Thomas, Nashville. The new directors are Messrs. Lewis, Cole, Richardson, Goodwyn, Smith, Danley and Thompson. One of these fills the vacancy caused by the death of Mr. Burns, while the others succeed L. H. Lanier, of Memphis; J. S. Rogers, Thomas W. Evans, E. B. Wesley, O. H. P. Belmont and J. D. Probst, of New York, who are all left out. This action was taken, it is stated, because it is thought better to have the directory composed of Tennesseans.

After the stockholders adjourned the directors met and re-elected all the old officers, as follows: J. W. Thomas, president and general manager; J. H. Ambrose, secretary and treasurer; J. D. Maney, controller, and Hunter McDonald, chief engineer. Authority was given to issue bonds on twenty-five miles of additional road purchased and constructed. The road will continue to operate the Tennessee Midland and Paducah, Tennessee & Alabama, in spite of the fact that the lease is not ratified.

#### A Prosperous Railroad—Annual Meeting of the Georgia & Alabama.

[Special Dispatch to Manufacturers' Record.] Americus, Ga., December 16.

The annual meeting of the stockholders of the Georgia & Alabama Railway took place in this city today. Of the \$6,280,000 capital stock outstanding, every share was represented in person or by proxy. President Williams submitted his report for the ten and one-half months from August 15, 1895, the date on which the Georgia & Alabama Company took possession of this property, to June 30, 1896, showing a large increase in every department of the company's business. The approximate gross earnings for eleven months and one week in the current calendar year are reported at \$803,171, against \$457,052 for the same period of last year, an increase of \$346,119. The net earnings of the company have increased in still greater ratio.

Resolutions were unanimously passed, under which the consolidation of the Columbus & Southern Railroad with the Georgia & Alabama Railway was effected. This new acquisition of the Georgia & Alabama system gives it the shortest existing line between Columbus, Ga., and Savannah, and also between Albany, Ga., and Montgomery, Ala., giving the system a total mileage of 450 miles. At midnight Saturday the Columbus & Southern will be turned over to the Georgia & Alabama Railway. The line from Richland to Columbus will hereafter be known as the Columbus division of the Georgia & Alabama Railway, and from Richland to Albany will be known as the Albany division.

President Williams, in his annual report, comments upon the tide of immigration which is now setting towards the portion of Georgia through which this road runs. One town upon the line of this railway has, in the past fifteen months, received about 8000 colonists from all portions of the Union, and they are still coming in. The colonists are reported to be generally thriving and highly pleased with the new conditions and their surroundings.

The Georgia & Alabama Railway is now the largest independent road not identified with one of the great Southern systems, in this part of the South, and this independence, together with its very liberal policy, has won for it the admiration and cordial good will of the great mass of people throughout this section.

Dec. 1

The meet elected the for the ne Cochran, Shepard, Thalman, Brown, J. Sperry, B Williams, R. W. Ma C. D. B. D. Stetson and John S. A. Car

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The meeting of stockholders today elected the following directors to serve for the next fiscal year: William F. Cochran, Yonkers, N. Y.; C. Sidney Shepard, New Haven, N. Y.; Ernst Thalman, New York city; J. Wilcox Brown, J. W. Middendorf and R. B. Sperry, Baltimore; John Skelton Williams, Richmond, Va.; John Flannery, W. W. Mackall, W. W. Williamson and C. D. Baldwin, Savannah, Ga.; James D. Stetson, Macon, Ga.; Cecil Gabbett and John W. Sheffield, Americus, Ga.; S. A. Carter, Americus, Ga.

The directors elected the following general officers for the ensuing year: President, John Skelton Williams, Richmond, Va.; first vice-president and general manager, Cecil Gabbett, Americus, Ga.; second vice-president, John W. Middendorf, Baltimore, Md.; secretary, W. W. Mackall, Savannah; treasurer, J. Wilcox Brown, Baltimore, Md.

#### Transfers of Street Railways.

Three very important railway deals, affecting some of the largest street-car systems in the South, have recently been arranged. One of the most important is the transfer of the Nashville lines comprised in the Nashville Street Railway Co. to a syndicate of which Charles M. McGhee, of Knoxville, Tenn., is at the head. Messrs. Nat. Baxter, Jr., and A. M. Shook, of the Tennessee Coal & Iron Co., have been security-holders in this system, and it is stated will be associated with Mr. McGhee in the new company. The transfer involves the sale of \$650,000 in stock and bonds held by the firm of Inman, Swann & Co., of New York, and W. H. Jackson. The company controls forty-six miles of line operated by electric motors.

It is announced that John A. Williamson, of Newport, Ky.; C. B. Simrall, of Covington; William E. Hutton, of Cincinnati, and others have secured the Covington, Newport & Cincinnati Street Railway, formerly owned by John J. Shipperd, of Cleveland. This system comprises sixty miles of line, operated by animal and electric power, and extends between the cities named and to a number of smaller places in Kentucky. Jas. C. Ernst, of Covington, will be president of the new company, and George M. Abbott, secretary and treasurer.

A dispatch from Chattanooga states that J. H. Warner, of that city, formerly owner of the City Street Railway, is at the head of a syndicate that has obtained a controlling interest in the stock of the Chattanooga Electric Railway Co. Associated with him is Percy Warner, of Nashville. This company controls thirty-two miles of line in the city and suburbs. J. H. Warner is president of the new company.

#### Railroad Notes.

The Central Passenger Railway Co., of Baltimore, has purchased fifteen additional cars for use on its lines.

The Chesapeake & Ohio is negotiating with the Richmond Locomotive Works for several additional engines.

It is announced that W. C. Dotterer, of Little Rock, Ark., has been appointed general manager of the New Orleans & Western, succeeding John M. Turner.

The annual meeting of the Georgia Midland Company resulted in the election of Samuel Spencer as president. This road is a part of the Southern system.

O. P. McCarty has been appointed assistant general passenger agent of the Atlantic division of the Southern Pacific system, with headquarters at New Orleans.

R. G. Stone has been appointed general agent of the Macon & Birmingham road.

He was formerly connected with the Georgia Southern & Florida as general freight agent.

In a letter to the Manufacturers' Record, Mr. C. P. Huntington denies the report in the daily press that he is interested in the construction of a shorter railroad between Cincinnati and New Orleans.

A dispatch from San Antonio, Texas, states that arrangements are being made for a through line of sleeping cars from that city to St. Louis. The St. Louis & San Francisco, the Gulf, Colorado & Santa Fe and the San Antonio & Aransas Pass roads will be utilized in the service.

As announced in the last issue of the Manufacturers' Record, the Columbus Southern road has been purchased by the Georgia & Alabama, which will operate it as a part of its system. The following officers have been appointed for the Columbus Southern: E. R. Williams, president; Cecil Gabbett, vice-president, and W. V. Davis, secretary.

The Chesapeake & Ohio has begun the extended use of compressed air, having recently ordered two new air compressors from the Norwalk Iron Works. One of these is to be used at the shops at Huntington, W. Va., and the other at the shops at Richmond, Va. At Huntington the compressor has been installed and a transfer table is now operated by air. The company is using air in painting cars, etc.

At the annual meeting of the Birmingham (Ala.) Railway & Electric Co., the following officers were elected: President, A. M. Shook; first vice-president, Robert Jenison; second vice-president, William A. Walker; general manager, J. B. McClary; secretary and treasurer, J. A. Stratton. The report submitted showed that the lines carried 480,000 passengers more than during the previous year.

The International & Great Northern Company is attracting attention to the advantages possessed by Texas as a winter resort, and is publishing some excellent literature on the subject. A pamphlet which it has recently issued is entitled "Ideal Winter Resorts of Texas." It should be read by all interested in the Southwest, as it contains much information of value, in addition to being artistically illustrated.

The Norfolk, Willoughby Spit & Old Point Railway Co. is preparing to begin operations over its line between Norfolk and Willoughby Spit. The company has secured a steamer, 125 feet long and twenty-eight feet beam, which will make regular trips from the terminus of the electric line to Old Point. The entire distance from Norfolk to Old Point will be covered in less than an hour, as the distance from the railroad terminus to the Point is less than three miles.

In a recent interview with a New Orleans Picayune reporter, W. A. Benscoter, assistant general passenger agent of the Southern system, said: "The effort of the Southern towards introducing new settlers along its southern line is quite encouraging. Not only have a number of new settlers already located in the South, but there are large parties now touring the country seeking locations. Only a short time ago a large lumber and saw-mill plant was established near Hattiesburg, a plant which, when it has gotten well into operation, will turn out 1500 carloads of lumber every month. These gentlemen, who are largely interested in lumber mills and such industries in the East, say that they will make a great deal more employment for people in the South by the introduction of other milling enterprises."

#### TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

#### Prosperous Cotton-Mill Operatives.

Mr. H. H. Hickman, president Graniteville Manufacturing Co., Augusta, Ga., in a letter to the Manufacturers' Record referring to an editorial in our last issue, says: "Your remarks concerning Howard and Estes meet with my hearty approbation, except that you do not put it quite strong enough. I cannot say what success they have had in Augusta, as all their meetings are in secret. They will not allow the presidents, superintendents or overseers of mills to enter their meetings. Everybody of intelligence knows that these men are not seeking the interest of the operatives, but their sole object is to get a living from their hard-earned wages, and if it were possible to do so, they should be arrested and put on the chain gang as disturbers of the peace. It is a fact that the operatives of cotton mills are better off than any class of laborers in the South. They are getting old wages, and living on about one-half that it cost them some years ago. My operatives are peaceful, contented and happy, and are making more money than the company. They have comfortable houses and gardens. They raise their vegetables and chickens, and the company educates their children free of expense to them. I have no fears that these tramps can do anything with my people. But if Southern operatives enter into a league with such men and should desire a strike, they can get it to their heart's content."

The Hucomuga Mills, of Greensboro, N. C., in a letter to the Manufacturers' Record, say: "We note with regret that Howard and Estes are abroad in our Southland, where employer and employee are peacefully and contentedly laboring for each other's mutual benefit, and for the upbuilding of manufacturing industries in the South, endeavoring in their diabolical way to create strife and discord. Should they succeed, it will be a step backward for the South, now rapidly forging to the front in cotton manufacturing. But we believe that the intelligent Southern laborer, recognizing his employer as his friend, will give these agitators the reception which they deserve."

#### Contemplates a 20,000-Spindle Mill.

The Cedartown Cotton Manufacturing Co., of Cedartown, Ga., is at present operating its plant night and day in order to fill its orders for No. 20s hosiery yarns, and is running on this class of goods only. Mr. Charles Adamson, president of the company, informs the Manufacturers' Record that during the coming year he will endeavor to raise capital for another 20,000-spindle mill to produce hosiery yarns (mule spinning). Mr. Adamson expresses his belief that the proposed mill will materialize.

#### Waxhaw's 10,000-Spindle Cotton Mill.

Messrs. Rodman & Heath, of Waxhaw, N. C., write the Manufacturers' Record that they have fully decided upon the erection of the cotton mill mentioned in our last issue. The buildings will soon be commenced, lumber and

brick having been contracted for, and a sidetrack for railway facilities is now being built. It is proposed that the equipment consist of 10,000 spindles for making untwisted yarns, or 7500 spindles with twisters, and this machinery will be bought in '97. A 250 horse-power engine will be put in for power plant.

#### Textile Notes.

Messrs. Green & Son will put in machinery for the manufacture of yarns at their knitting mill near Williston, S. C.

The building for the new Abbeville Cotton Mills, at Abbeville, S. C., has been completed, and the equipment of 18,000 spindles, as contemplated, will soon be installed and operations commenced.

The Patterson Manufacturing Co., of China Grove, N. C., has completed its new mill building, and the equipment of machinery has been ordered. The outfit will consist of 5000 spindles, pickers, looms, etc.

The Eagle & Phoenix Manufacturing Co., of Columbus, Ga., intends to at once replace seventy-five of its old looms with new ones at a cost of about \$30,000. The permission of the court has been obtained by the receivers to contract for the new machinery.

The Mallison Braided Cord Co., of Athens, Ga., intends to add new machinery to its plant. The product is at present solid braided sash cord, bell and signal ropes, and back band webbing is to be added. Machinery for making the latter-named product is now wanted.

There is a movement on foot at Greenville, Ala., for the organization of a cotton-mill company, and a committee is now soliciting subscriptions. Application for charter will be made. Among those interested are Messrs. H. D. Lamplrey, H. L. Brown, R. A. Belland, R. V. Porter and others.

The Gaston Cotton Mill, of Cherryville, N. C., has recently completed its new building, and will place its equipment in at once. The outfit, which has been ordered, will consist of 2000 spindles, spoolers, cards, 100 looms, etc. The equipment will probably be increased to 5000 spindles later on.

The Edgefield Cotton Manufacturing Co., of Edgefield, S. C., has nearly completed its mill building, and in the near future the machinery will commence to arrive. It is intended to install 5000 spindles and 175 looms at the start, and double this when conditions warrant it. The building is two stories high, 227x78 feet.

The new People's Cotton Factory buildings at Montgomery, Ala., are nearing completion, and the machinery will commence to arrive next month. The equipment is to consist of 10,000 spindles, 320 looms and complementary machinery of the latest improved designs. The plant will be in operation by May 1; Mr. T. L. Jones, treasurer.

The Elizabeth City Manufacturing Co., of Elizabeth City, N. C., has reorganized, and work on the new cotton-mill buildings is to be resumed and pushed to completion. The directors are Messrs. E. F. Lamb (president), R. B. Martin (vice-president), Wm. E. Dunston (secretary-treasurer), W. Lynch, J. B. Flora, C. W. Hollowell and B. W. Leigh.

A charter has been granted to the Spartanburg Knitting Mill Co., of Spartanburg, S. C., with a capital stock of \$10,000, for the purpose of establishing and operating a knitting plant. The directors are Messrs. L. M. Gentry, G. W. Heinisch, Warren Du Pre and D. C. Correll. Mr. J. J. Gentry is president and treasurer, and D. C. Correll, secretary.

## MECHANICAL.

## Plant Line Steamship "La Grande Duchesse."

The excellent work of a Southern shipyard and the character of accommodations that are now being furnished to the public by some of the transportation

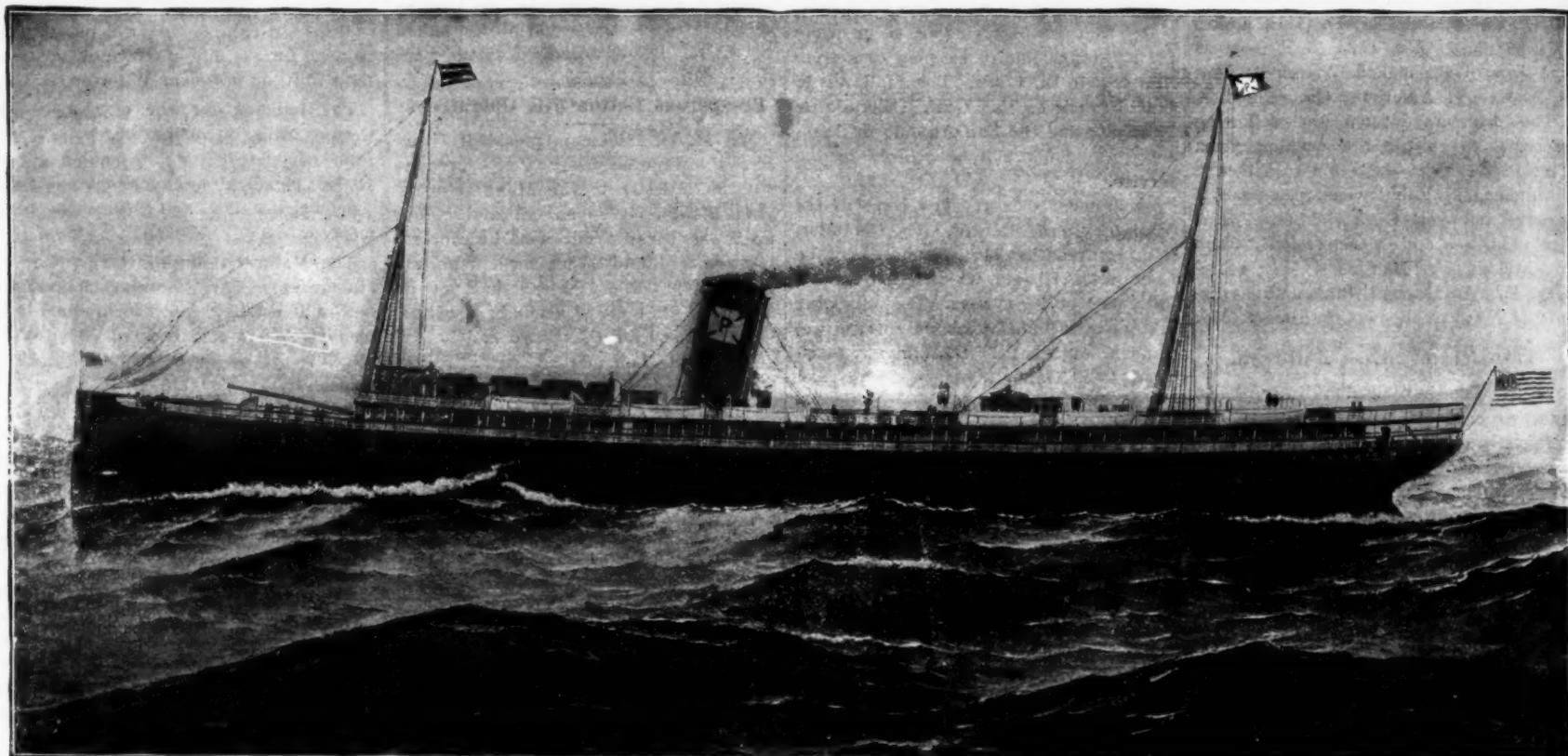
is the main saloon, with two tiers of staterooms on each side; in the forward end of this saloon is a grand stairway leading to the social hall above. Immediately aft of the main saloon are toilet, bathrooms, etc., for ladies and gentlemen.

In the forward end of the upper or promenade deck is a social hall for second-class passengers, aft of which is a

ganese bronze. The total horse-power of the engines is about 7000.

Steam is supplied by eight Babcock & Wilcox water tubular boilers built for a working pressure of 250 pounds of steam, fitted with one smokestack. In addition, there are numerous Blake pumps for ballast, bilge, sanitary, fire and feed purposes.

all in use furnishing power to the factories in and immediately around Niagara. The most recent addition to the power-house equipment is one of the General Electric Co.'s converters to take the two-phase current from the generators at 2200 volts and turn direct current into the lines of two or three railroad companies at a pressure of from 575



PLANT STEAMSHIP "LA GRANDE DUCHESSE."

companies operating between the South and the North are strikingly brought out in the steamship "La Grande Duchesse," lately built for the Plant system by the Newport News Ship-Yard & Dry-Dock Co.

This vessel is built entirely of steel, of the following dimensions: 404 feet long over all, 380 feet between perpendiculars, forty-seven feet nine inches beam, thirty-seven feet four inches deep from top of deck to base line, and is fitted with two steel masts, fore-and-aft rigged. She has a water bottom extending from her stuffing-box bulkhead to her collision bulkhead, also numerous steel decks; all the houses are of steel and the frames are of Z section.

The stern and rudder frames are made of cast steel, and the rudder stock of the best fluid compressed steel, manufactured by the Bethlehem Iron Works, while the steering gear consists of a steam apparatus operated by a telemotor; also heavy Napier steering gear. The vessel is fitted with a Providence steam windlass and capstan and Williamson Bros.' hoisting engines for handling cargo, and in addition thereto there are also steam elevators in two of the hatches.

On the main deck forward is the dining saloon, with a seating capacity for 125 people. This room is handsomely fitted up and decorated in white and gold. Forward of the dining-room is a reception-room for second-class passengers, forward of which is sleeping accommodations for these passengers. In the after end of the dining saloon is a grand stairway leading to the social hall above.

On the main deck aft of the dining saloon is a pantry, and aft of this is a large galley. On this deck is located cold storage for provisions, officers' messroom, baker and porter shop, telephone exchange room, stewardess' room and a number of staterooms abreast of the boiler and engine hatches for oilers, water-tenders, etc. Aft of the machinery

social hall for first-class passengers, with a stairway leading to the dining-room. This social hall has quite a number of staterooms for first-class passengers.

The vessel is equipped with twelve life-boats, six life-rafts and the necessary life-preservers, etc., and, in fact, everything necessary for the safety of passengers and crew. There is also a complete

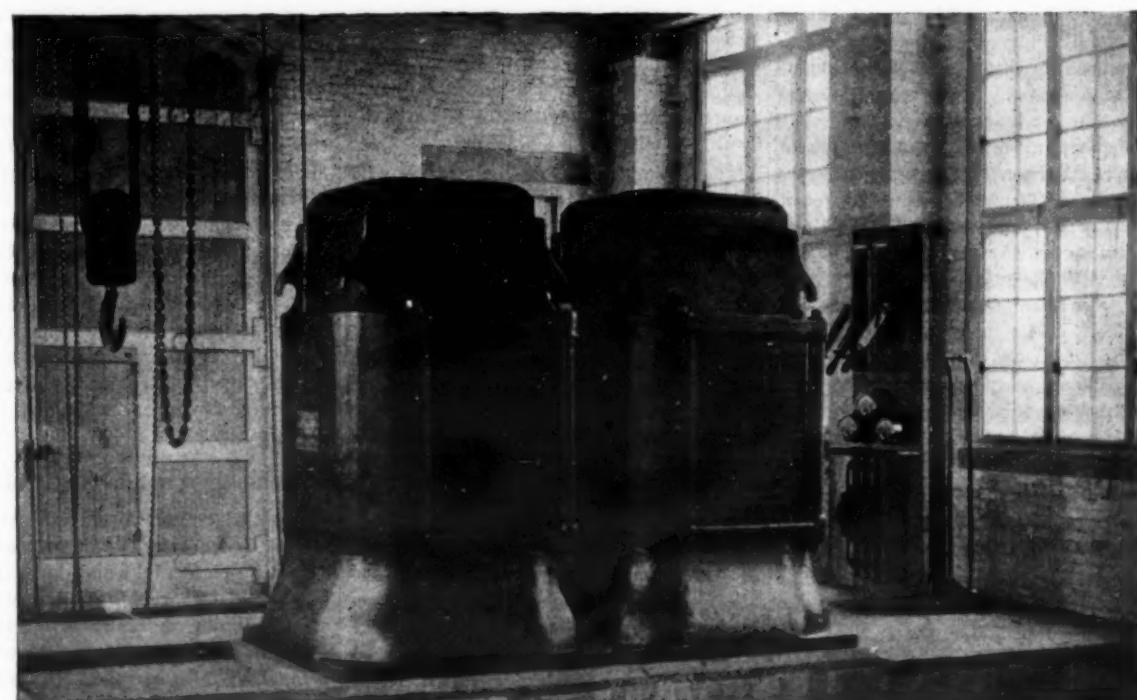
This vessel has also been designed in compliance with United States government requirements for auxiliary cruisers.

## Niagara's Power at Buffalo.

The 18th of November, 1896, marked an epoch in the history of Buffalo that promises to revolutionize the whole manufacturing aspect of that busy city

volts to 600 volts.

When the question of the transmission of power from Niagara to Buffalo was under discussion, the merits of the three-phase system as compared with the two-phase system for transmission purposes were canvassed. It was shown to the satisfaction of the Power Company that, in using the three-phase system for trans-



THE 1250 HORSE-POWER STEP-UP TRANSFORMERS AT NIAGARA.

ventilating system connected to every compartment and stateroom; the vessel is also fitted with a complete fire-alarm system, and is lighted with electricity, which is furnished by two generators, direct-driven; also searchlight, etc.

The machinery consists of two inverted, direct-acting, service-condensing, quadruple expansion engines, driving twin screws; wheels made of the best man-

within a short time. One minute after midnight, with the closing of five sets of switches, the power from the cataract at Niagara was brought into the city of Buffalo.

The history of the generating station of the Niagara Falls Power Co. is already so well known to our readers that we will not refer to it except to say that the three great two-phase generators are

mission, a large economy could be made in the transmission installation, and the three-phase system of the General Electric Co. was selected.

The current from the Falls is generated by the Niagara Falls Power Co., which transmits the power as far as the city limits of Buffalo. All the construction work in connection with this installation was effected by the Cataract Con-

struction Co., while the distribution, after it has reached the city limits, is in the hands of a sub-company entitled "The Cataract Power & Conduit Co."

The two-phase current starting from the generators in the power-house is led first to the switchboard, and then in lead-covered cables through the covered "Bridge of Signs," which passes over the canal of the Niagara Falls Power Co. to a spacious transformer house which has been erected on the opposite side of the

transmission line, and one small crossarm for a telephone line. Each side of each crossarm has space for three pins to carry three insulators, provision being thus made for four circuits of three wires apiece, the capacity of each circuit being 5000 horse-power at 11,000 volts pressure, and 10,000 horse-power at 22,000 volts pressure. On the outside of each upper crossarm is a small iron pin, eighteen inches high, which serves to carry a galvanized barbed wire used as a light-

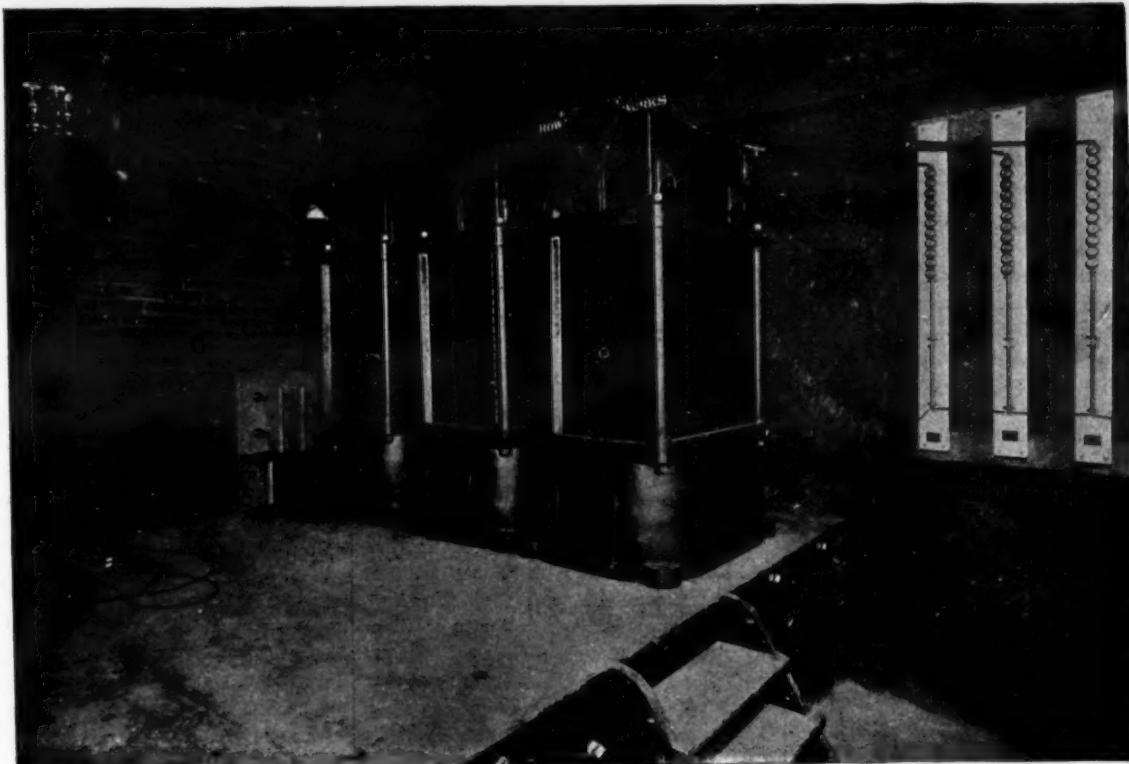
approaches the station at Buffalo, which it does along the banks of the Erie canal, it is charged from overhead to underground, the wires passing from the last pole into a small brick terminal house. In this house connections are made with the underground cables through lightning arresters. The underground cable is rubber covered and sheathed with lead, and is of the same diameter as the overhead conductor. It is laid in a subway consisting of vitrified tiled ducts, each

two being in use and the third being held in reserve. Each weighs 7000 pounds, is eighty-two inches high, with a base measurement of 47x36 inches. In the step-down transformers the pressure is reduced from 10,700 volts to 370.

A system of cooling the transformers similar to that used with the step-up transformers at the Niagara end is used.

From the step-down transformers the three-phase current, divided into two circuits, passes over six cables to the main floor of the power-house of the Buffalo Railway Co., where they are connected to another switchboard. Thence they pass to the two rotary converters, each of 500 horse-power capacity. These converters are six-pole machines, and in their operation the three-phase alternating current at 370 volts is changed into direct current at 500 volts, suitable for delivery to the feeder line of the electric street railway. Each converter armature is provided with three collector rings at one side and a commutator at the other, and may be started either by the alternating current or by direct current from the railway lines. The converters may be used in parallel with the other generators, or the current can be thrown directly into the feeders of the railway system.

The lightning arresters, of the Wirt type, have been especially designed for heavy voltage transmission work, and are single pole. They consist of strips of marble, upon which are mounted eleven cylinders, giving one air gap space one-thirty-second inch for each 1000 volts, with an allowance of 25 per cent. rise in the potential. In the action of the arrester the large metal cylinders serve to chill the arc, so that, on reversal of the current, the arc is extinguished, no dependence being placed upon any non-arc-ing property of the metal to put out the arc. In order to limit the current on short circuit, and thus the heating effect, a special solid graphite rod of low non-inductive resistance is used. The arresters are similar to those used on the Big Cottonwood transmission at Salt Lake City, which have effectually protected the machinery in many severe storms and are now being used extensively in transmissions where high voltages are employed.



THE STEP-DOWN TRANSFORMERS AT BUFFALO.

canal. Here the cables are connected to four switches on a blue marble switchboard. From this board they pass to the step-up transformers, the largest in the world, erected on a platform at one end of the power-house and placed over an air-tight chamber. Each has a capacity of 935 kilowatts, or 1250 horse-power, and stands ninety-four inches high on a base 64x56 inches, and weighs 25,000 pounds.

The problem of cooling these transformers has been solved by driving a blast of cold air up through the air passages provided in the core and coils. The blast is furnished by a large blower, driven by a five horse-power multipolar, which is belted to it. It is in these transformers that the two-phase system is abandoned and the current given three phases, and raised from 2200 volts alternating to 11,000 volts. Provision is also made in these transformers for raising the voltage to 22,000 volts as soon as higher pressure shall have become necessary.

From the transformers three cables pass to the high-tension switchboard standing beside them. This switchboard is also of marble, and carries three high-tension switches, each switch being separated by a marble barrier about one inch thick. This partition prevents arcing from switch to switch at the high pressure used. The switchboard also carries current indicators and three special fuse carriers. From the transformer house the wires pass through lightning arresters to the first pole of the pole line standing immediately in the rear of the building.

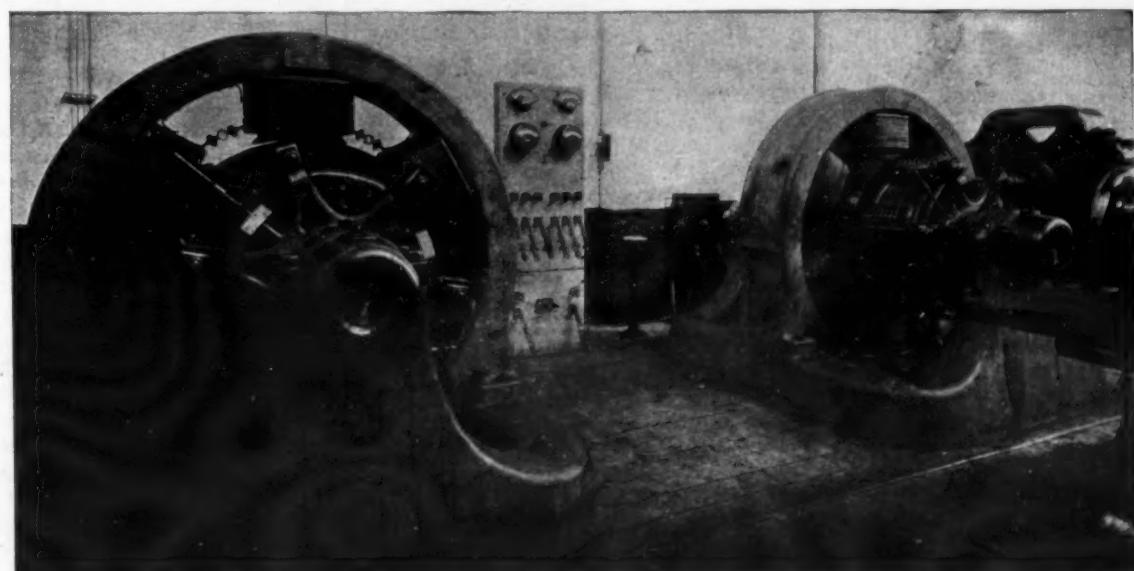
The pole line, erected by White, Crosby & Co., runs along one side of a special right of way thirty feet wide. The number of poles in this line is about 21,000; they range from thirty-five to sixty-five feet in length, and are set about seventy-five feet apart. Each pole is provided with two 12-foot crossarms for the

conducting conductor and connected to the ground at the foot of every fifth pole.

The insulators used are of the double-petticoat pattern. Each weighs about twelve pounds, and is provided with two annular grooves in the bottom, which effectually prevent any moisture getting to the central pin, on which the insulator is placed. The outside of the insulator is provided with a gutter running to a point on each side to carry off the water.

duct having a hole three inches in diameter. The subway consists of twelve of these ducts, laid eighteen inches below the surface of the ground, and surrounded on all sides by four inches of concrete. Three ducts only are in present use. The insulation of these cables was tested to withstand 80,000 volts.

The subway terminates in a small brick structure erected in the rear of the Niagara street power-house of the Buffalo



THE ROTARY CONVERTERS AT BUFFALO.

These insulators were subjected to a rigid test of 40,000 volts alternating to determine the electrical resistance, and not until they had withstood this pressure satisfactorily were they accepted.

The length of the line is twenty-six miles. The overhead conductors are of bare, stranded copper, each conductor having a diameter of 350,000 circular mils, and each lies in a groove at the apex of the insulators. When the line

Railway Co. This contains the step-down transformers. On entering this small house the wires are connected to another switchboard carrying high-voltage switches and fuse carriers, separated by partitions of marble, in the same manner as on the high-tension switchboard at the Niagara Falls end of the transmission. From this board cables are carried through lightning arresters to the transformers, of which there are three,

The entire apparatus used in the transmission of the current from Niagara Falls to Buffalo is from the shops of the General Electric Co., having been designed especially for this special service.

If you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send us a postal card giving the character of the machinery needed.

## LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

## Lumber Directory.

Readers of the Manufacturers' Record who may be in the market for lumber of any description are recommended to the directory of Southern lumber manufacturers and dealers which appears among the advertising pages.

## LUMBER MARKET REVIEWS.

## Baltimore.

Office Manufacturers' Record,  
Baltimore, Md., December 17.

During the week under review the local lumber market has shown no increased activity except in one or two avenues, and the demand is not likely to show any improvement until after the new year. Yardmen and others engaged in this industry do not care to increase stocks at this period of the season, but rather to enter the new year with the assortment reduced to a minimum. Receipts of yellow pine are light, and stocks at the moment are ample for the light demand. Rough lumber is very plenty, but there is a scarcity of the better grades. The volume of business in kiln-dried North Carolina pine is fair, and there is a good inquiry, with prices very steady. The action of the convention in Cincinnati on Tuesday last is freely discussed among the local trade, and it is thought that a restoration of the tariff on lumber will be effected. The white-pine business is quiet, with very little demand and prices firm. In hardwoods there is some inquiry from out-of-town buyers, and it is stated that considerable business will be developed after the new year. Shippers are more encouraged by the outlook, and the relief extended by the Baltimore & Ohio Railroad enables them to send forward their shipments more promptly.

The following list represents the prices current at this date:

[The quotations for yellow pine are for cargo lots, and for all hardwoods the figures indicate values for choice lots.]

VIRGINIA AND NORTH CAROLINA PINE	
5-4x10 No. 2, kiln dried.....	\$12 50@ 13 50
5-4x12 No. 2, kiln dried.....	14 00@ 15 00
4-4x10 No. 1, kiln dried.....	15 00@ 15 50
4-4x12 No. 1, kiln dried.....	15 50@ 16 50
4-4 nar. edge, No. 1, kiln dried.....	13 00@ 14 00
4-4 wide edge, No. 1, kiln dr'd.....	17 00@ 18 00
6-4x10 & 12. No. 1, kiln dried.....	23 00@ 24 00
4-4 No. 1 edge floor, air dried.....	13 00@ 14 00
4-4 No. 2 edge floor, air dried.....	10 00@ 11 00
4-4 No. 1 12-in. stock, air dried.....	15 00@ 16 00
4-4 No. 2 12-inch stock.....	12 00@ 12 50
4-4 edge box or rough wide.....	7 50@ 8 50
4-4 edge box do. (ord. widths).....	6 50@ 7 50
4-4 12-inch rough.....	9 00@ 10 00
4-4 narrow edge.....	5 00@ 6 00
4-4 wide.....	6 50@ 7 50
4-4 9 1/2 and 10 1/4-inch.....	8 50@ 9 50
Small joists, 2 1/2-12, 14 and 16 long.....	7 50@ 8 50
Large joists, 3-16 long and up.....	8 00@ 9 00
Scantlings, 2x3, 2x4 and 3x4.....	7 00@ 8 00

WHITE PINE.

1st and 2d clear, 4-4, 6-4 and 8-4.....

47 50@ 48 50

2d clear, 4-4, 5-4, 6-4 and 8-4.....

42 50@ 43 50

Good edge culls.....

14 00@ 15 00

Good stock.....

16 00@ 17 00

CYPRESS.

4-4x6, No. 1.....

20 00@ 21 00

4-4x6, No. 2.....

14 00@ 15 00

4-4x6, 16 feet, fencing.....

10 50@ 11 50

4-4x6, rough.....

8 00@ 9 00

4-4 rough edge.....

8 00@ 9 00

4-4 edge, No. 1.....

16 00@ 17 00

4-4 edge, No. 2.....

12 00@ 13 00

Gulf, 4-4, Nos. 1 and 2.....

28 50@ 30 50

Gulf, 6-4, Nos. 1 and 2.....

31 50@ 32 50

HARDWOODS-WALNUT.

5-8, Nos. 1 and 2.....

65 00@ 75 00

4-4, Nos. 1 and 2.....

90 00@ 90 00

5-4, 6-4 and 8-4.....

85 00@ 95 00

Newell stuff, clear of heart.....

85 00@ 100 00

Culls.....

20 00@ 30 00

OAK.

Cabinet, white and red, South-ern, plain-sawed and good, 1 and 2, 8 inches and up, 12 to 16 feet long, 4-4.....

30 00@ 34 00

Quartered white, Western, 1 and 2 quality, all figured, 6 inches and up wide, 4-4.....

53 00@ 55 00

Culls.....

10 00@ 15 00

POPLAR.

Nos. 1 and 2, 5-8.....

24 50@ 25 50

Nos. 1 and 2, 4-4.....

28 00@ 30 00

Nos. 1 and 2, 6 and 8-4.....

32 50@ 33 50

Culls.....

11 50@ 12 50

SHINGLES.

Cypr., No. 1 h'rits, sawed, 6x20.....

6 50@ 7 50

No. 1 saps, sawed, 6x20.....

4 75@ 5 25

No. 1 hearts, shaved, 6x20.....

6 00@ 7 00

No. 1 saps, shaved, 6x20.....

5 00@

LATHS.

White pine.....

2 50@ 2 75

Spruce.....

2 10@ 2 20

Cypress.....

2 10@ 2 20

## Savannah.

[From our own Correspondent.]

Savannah, Ga., December 14.

The general trade of this port at the moment indicates a very encouraging outlook for the future of this city. Along the wharves and docks during the past week an unusual activity has prevailed, and shipments of cotton, naval stores, phosphate rock and lumber have been very brisk. The lumber industry of this section is just now showing a very respectable volume of trade, and while the demand is increasing prices rule firm, with an upward tendency. The movement in crossties is at present active, and there is a good inquiry from Northern and other sources for this commodity. For all desirable grades of lumber there is a fair demand from local sources and from out-of-town buyers, while the market closed on Saturday very steady at the following figures: Ordinary sizes, \$11 to \$12; difficult sizes, \$13 to \$18; flooring boards, \$15 to \$22; shipluff, \$16.50 to \$20, and sawn ties, \$10. At nearly all the milling sections comes the reports of a better condition of affairs among manufacturers, and at Cordele, Darien, Brunswick and other points mills are well supplied with orders, while the general feeling among operators is that in the near future a better business will be the rule. Among the clearances last week a large amount of material was distributed, while there is more inquiry from foreign sources for certain grades of lumber. The shipments last week were as follows: Schooner Annie E. Stevens for Fall River with 189,783 feet of pitch-pine lumber; schooners Margaret A. May with 375,128 feet, Frank Vanderherchen with 388,195 feet, and Ida Lawrence with 370,422 feet, all for Baltimore; schooner Mary B. Baird for Philadelphia with 572,384 feet; brig Robert Dillon for Perth Amboy with 7312 crossties, measuring 265,000 feet. The barkentine Carrie L. Tyler cleared for New York with 331,496 feet of pitch-pine lumber, and Spanish bark Josefa for Barcelona with 219,682 feet. New York steamers cleared with 128,000 feet of lumber, with other cargo; Baltimore steamers with 126,000 feet of lumber and 1294 crossties, and Boston steamers with 9485 feet of lumber. Desirable vessels are scarce, and freight rates are steady and unchanged. From this and nearby ports in Georgia rates are quoted at \$4 to \$4.50 for a range including Baltimore and Portland, Me. Railroad ties, basis forty-four feet, 16 cents. To the West Indies and Windward rates are nominal; to Rosario, \$12 to \$13; Buenos Ayres and Montevideo, \$10 to \$11; to Rio Janeiro, \$14; to Spanish and Mediterranean ports, \$11.30 to \$11.50. Steamer rates to New York and Philadelphia \$7, to Boston \$8 and Baltimore \$5. The schooner C. C. Wehrum was chartered in New York on Saturday to load lumber here for that port at \$4.37 1/2.

## Pensacola.

[From our own Correspondent.]

Pensacola, Fla., December 14.

The lumber and timber industry, which, during the past month has been moderately active here, is now rather quiet, and as the new year approaches business throughout the holidays will be of less volume. Manufacturers of lumber and timber, as well as shippers, are looking forward to an active trade after the 1st of January, and are making preparations for additional business. The demand from all markets for lumber is on the increase, and from South and Central America, Mexico, South Africa and the West Indies a number of inquiries are being received. For sawn timber prices hold very steady, but do not advance, as expected, and stocks are generally firmly held in hopes of an ad-

vance in the near future. A party of lumbermen and capitalists arrived here on Thursday last and spent the afternoon in inspecting the large saw mills in this vicinity. They will continue their trip through South Alabama and Mississippi to New Orleans. As to their mission, nothing definite could be obtained, the principals being very reticent as to their future operations. There have been a number of charters lately for vessels to load here for domestic and foreign ports, and the indications are that January will be a busy month. Among the shipments last month were the bark Pensacola for Buenos Ayres with 4372 cubic feet of sawn timber and 629,000 superficial feet of lumber, shipped by Parodi & Co. The steamship Fransica cleared for Liverpool with 23,000 feet of lumber among her cargo. The timber market closed on Saturday very steady, with stocks not excessive and advices from the British markets more encouraging. Among the charters reported are the following: British steamer Ethelgonda, 1726 tons, from a Gulf port to Fleetwood with sawn timber at 110/; prompt; British steamer Drummond, 1794 tons, from Pensacola to the United Kingdom or Continent with sawn timber at 105/ if one port and 110/ if two, February-March; Norwegian bark Royal, 670 tons, from Apalachicola to Cardiff with sawn timber at 100/; schooner Flora Woodhouse from Pearlington, Miss., to Colon with lumber at \$10.50, and schooner Hildebrand from Pearlington, Miss., to Campeche, Mexico, with lumber at \$9.50.

## Mobile.

[From our own Correspondent.]

Mobile, Ala., December 14.

A glance at the report of the collector of customs for this port for the month of November will at once show the rapid increase of business as compared with the corresponding month last year. The total value of exports of domestic merchandise for November is placed at \$1,230,241, against \$456,545 for the month of November, 1895. In lumber and timber the market has been fairly active, and a steady improvement has been the rule here during the past three months. Since September 1 the exports of lumber aggregate 18,893,563 superficial feet, against 15,024,855 feet a year ago. In sawn timber 1,368,804 cubic feet went abroad, against 919,157 cubic feet for the corresponding period last year. Of hewn timber the shipments since September 1 have not been as large as last year on account of the scarcity, stocks having been much reduced and timber scarce at points of production. The exports of hewn timber since September 1 amount to 121,988 cubic feet, against 294,275 feet a year ago. The demand for lumber during the month of November has been fairly active, and from South America the purchasing has been better than usual, with shipments to the Argentine Republic amounting to 3,251,000 superficial feet. British Africa has been a good buyer, 576,000 feet of lumber having been shipped to that market. The demand from Central America and the West Indies is improving, and considerable business is expected with these countries during the winter and spring months. Great Britain is down for shipments in November amounting to 648,000 superficial feet of timber and 406,000 feet of lumber. The outlook for December is fair, but as the new year approaches a lighter volume of trade is expected. Manufacturers and others generally enter the new year with stocks as light as possible, and a really active movement is not expected until about the middle of January. The presence here on Saturday last of the

distinguished party of lumbermen from the Northwest has created a topic for discussion among the trade, various opinions being advanced as to their prime motive in visiting the South. The party spent the morning in visiting points of interest around the city, and in the afternoon, through the courtesy of Mr. A. S. Benn, were taken for a trip up and down the river and into Chickasabogue creek, where they had a chance to see the timber booms and the large quantities of timber and logs that line the stream. The party leaves today for Moss Point to inspect the saw mills at that place; thence they will go to Pearlington, Miss., to inspect the Poitevant & Favre mills; thence to Gulfport and up the Gulf & Ship Island Railroad to Hattiesburg, Miss., and down the Northeastern Railroad to New Orleans, which city they expect to reach on Wednesday morning.

## New Orleans.

[From our own Correspondent.]

New Orleans, La., December 14.

A steady improvement in the lumber and timber industry, and a better feeling among manufacturers and others engaged in this industry has ruled in this section during November and up to date of the present month. There is a more vigorous tone to the market, and the movement of manufacturers in this State and Mississippi, South Alabama and Western Texas all indicate good business during January, 1897. The demand during the present month has been fair, and orders coming to hand are generally for good-sized lots, while the active inquiry from Northern and Western centres foreshadows a liberal volume of trade in the near future. From nearly all the Gulf ports the export trade is reported in good condition, and any restrictions to this branch of the lumber and timber trade have been caused by the heavy demand for tonnage to carry out cotton and grain. At the moment, however, there are a number of charters reported of vessels to load timber and lumber from Ship Island, Pascagoula, Pensacola and Mobile, and operators and shippers confidently expect prices to rule firmer and higher. At all milling centres along the lines of railroad entering this city the various plants have been put in first-class condition, a number of new saw mills have been erected, and at this date few are unemployed, nearly all being supplied with orders at figures which insure an improved margin of profit. Stocks of yellow pine are now much better assorted, while they are in no case excessive, the output being carefully manipulated by the various organizations of lumbermen. There is also a well-assorted stock of cypress reported, with a better demand and stocks ample for all immediate necessities. In hardwoods the conditions are favorable for a good trade during the spring months, and at the moment stocks of desirable material are light, with prices firm and hardening. The Mutual Lumber Co., an organization of Louisiana and Mississippi yellow-pine saw-mill men, held a meeting here on the 8th inst., being the regular monthly gathering, to discuss the situation. The prevailing opinion of those present at the meeting was that everything looked very bright, and everyone seemed satisfied with the outlook. The real-estate business here is improving, and city property is selling better. The demand for building material is good, and at present a number of buildings are being erected and public buildings projected. Among the large buildings in course of erection, the Great Southern Telephone & Telegraph Co. has obtained a permit for a five-story brick building to cost \$25,000, and Mr. E. Erwin, another business house to cost \$21,000. North-

ern and Eastern visitors are very numerous just now, and a number of excursions from their sections are already planned for the winter months. Capital is beginning to flow in considerable volume, and it would surprise the outside world to know what enterprises are to be located along the several lines of railroad entering this city. As an instance of the work being accomplished by the industrial agents of railroads, we can take, for example, the Illinois Central. During the last sixty days eleven factories have been established along the line of that road, seven of these being in Mississippi and the others at points in Kentucky and Illinois. What is true of this railroad corporation applies also to others terminating here, and hundreds of applications are on file from firms in the North and East for suitable locations for establishing enterprises of various kinds.

#### Beaumont.

Beaumont, Texas, December 12.

There has been a slight decline in orders at this place for the past week, but the trade in general has probably shown no falling off, as while decrease may be reported at one point, others perhaps show rather heavier orders than before. For instance, Orange shows a larger number of cars shipped last week than during any other week for several months past. The prospects of the trade at present present some very encouraging features, chief among which is the steady reduction of stocks on hand, which, owing to the season, will probably steadily decrease, as now that the wet weather has set in, air-dried stocks will necessarily receive their increase but slowly. From now until the first of the year no change for the better may be expected in the trade, as a temporary lull is generally expected during the holidays.

Millmen, however, are sanguine of the future, and believe that further advances in prices will soon be made. The movement of shingles is good, though no effort is being made to push sales, as shingle men are confident of an early rise in prices following the meeting of the Cypress Shingle Association, which will be held in New Orleans soon. It is expected that an advance of at least 25 cents will then be made, and until then manufacturers will remain at home and not solicit trade at present prices.

The export trade at Sabine Pass has been very lively the past week. Large shipments are being made by all the mills in this vicinity.

A steady increase in business through the Pass has been noted for the past year, which promises to continue until that point will be one of the largest lumber ports on the Gulf. It is expected that the government will continue improvements, and \$400,000 more has been recommended for improvements at Sabine Pass by the recent estimates for the coming year. Seventeen vessels, receiving and awaiting cargoes of lumber, lay at the Pass last week. T. C. Spotswood & Co., exporters at this point, held the largest number, now having seven vessels taking on cargoes. The Reliance Lumber Co. has been placing its exports on three vessels the past week, and the Consolidated Export Co. has been loading the same number.

The Bancroft Lumber Co. will send 1,000,000 feet of squared timbers to Europe by the bark Adorna, which arrived last week.

A new enterprise is reported in the nascent state in Calcasieu parish, Louisiana. For some time an effort has been made to interest capital in the erection of a paper mill in Southwest Louisiana. An abundant supply of rice straw can be obtained, which at present is not utilized,

and as there is no paper factory in this part of the South, a splendid opening is offered for one or more mills which could utilize this product now going to waste. The new mill will probably be located near Welsch, which is in the heart of the rice district of Southwest Louisiana.

W. F. F.

#### St. Louis.

[From our own Correspondent.]

St. Louis, Mo., December 14.

The general conditions surrounding the lumber market here are more favorable than usual at this period of the season. At the close of the year a falling off in trade is customary, as the settling up of the business of the year and stock-taking is in order, and buyers generally like to enter the new year with stocks at a minimum. The demand, however, during the past fortnight has been very fair for yellow-pine lumber, and orders continue to come to hand rather freely. Manufacturers are generally feeling much more encouraged by the present outlook, and the opinion prevails that soon after the opening of the new year a decided revival will take place. At all milling points business is moving briskly, and mills have orders sufficient to run until the opening up of trade in January. Stocks at all the mills are kept well in hand, and there is no accumulation, the demand being steady and the assortment slightly broken. Orders from out of town for yard stock are not so numerous, but the city trade is good, and building operations are going on with vigor under bright and balmy weather. There is a good demand for cypress, and some good sales are reported during the past week. There is not so much doing in hardwoods, and trade is slackening up as the new year approaches. Local yardmen are stocking up in anticipation of a good trade early in the new year, and are enjoying at the moment a very fair demand, but are not inclined to push the trade. The mills report the receipt of a very fair number of orders, with prices generally firm. Good dry quartered oak is moving freely, while plain and red oak is also in demand. Some good sales of furniture oak are reported, but the demand has fallen off slightly. There is a good cottonwood trade, and, as stocks are reported short, some active buying is being done and receipts are quickly disposed of, while prices are firm. There is a good inquiry for poplar and ash, with prices steady. In fact, the general condition of hardwoods is not materially changed, while there is a fair movement, with prices firm. The receipts of lumber for the week ending the 8th aggregated 1013 cars by rail and 1,602,000 feet from the lower rivers, compared with 1149 cars and 750,000 feet during the corresponding week last year. The shipments were 530 cars, against 619 cars a year ago.

#### Lumber Notes.

The vessels leaving Brunswick, Ga., on the 7th inst. carried out 2,197,000 feet of lumber and timber.

The large planing mill at Bardwell, Carlisle county, Kentucky, is now running on full time. A box factory has been added to the mill.

A lumber firm in Paducah, Ky., recently received a large order for Europe consisting of 900,000 feet of lumber, of which 500,000 feet are poplar and 400,000 feet are oak.

The telephone company at Columbia, S. C., is now using cedar poles brought from Lebanon, Tenn. The largest is over two feet in diameter at its base, being entirely of heart cedar.

The Loomis & Hart Manufacturing Co., of Chattanooga, Tenn., received 2,000,000 feet of logs last week from the

Upper Tennessee, Clinch, Watauga, French Broad and Hiwassee rivers.

The large chair factory at Wickliffe, Ballard county, Kentucky, a branch of a Wisconsin concern, started up last week, with a large additional force. Lumber interests are also showing much improvement.

A switch for the log train for the Big Creek Lumber Co., near Pollock, La., and a log dump extending a quarter of a mile along the bank of Big creek has been built. The cost of construction was about \$8000.

Receiver Amorous has advertised the plant and other property of the Foote & Zube Lumber Co. for sale on the 9th of January, 1897. The stock of lumber, material and other property is said to be quite valuable.

The Providence Lumber Co., at Lake Providence, La., shipped last week by steamer a barge of cypress lumber to C. L. Willey, of Chicago. It has also another barge load ready for shipment to Memphis, Tenn.

The Borlinghaus Box Manufacturing Co. was chartered in St. Louis last week, with a capital stock of \$10,000, fully paid and held as follows: Paschall Carr, Walter B. Carr, August Borlinghaus and Walter H. Spahr.

The receipts of lumber at New Orleans for the week ending the 10th inst. were 836,000 feet, and for the season 24,607,000 feet, against 34,216,000 feet a year ago. Receipts of laths 150,000, oak staves 127,000 and cypress staves 10,000.

One of the largest rafts that has ever been brought to the Louisiana Cypress Lumber Co., Harvey's canal, from Bayou Bouef, passed Des Allemande, La., last week. The raft contained 4700 sticks and scaled 1,700,000 feet of lumber.

No less than fourteen vessels were loading lumber and timber at Sabine Pass on the 10th inst., furnished by the mills of Orange and Beaumont, Texas. Of these, two were steamships, eight barks, four schooners, of an aggregate tonnage of 9164 tons.

The Spanish bark Josefa Formosa sailed last week from Brunswick, Ga., for Valencia, Spain, with 361,000 feet of lumber; the schooner D. Howard Speer for New York with 463,000 feet, and the schooner Greenleaf Johnson for Norwich, Conn., with 330,000 feet.

Articles of incorporation of the Fort Smith Lumber Co., of Fort Smith, Ark., were filed at Little Rock last week. The capital stock of the company is \$60,000, and the incorporators are William Blair, W. R. Abbott and John Gilmore. Mr. Blair is president of the company.

The Reliance Lumber Co., at Beaumont, Texas, has recently added to its woodworking equipment a timber sizer that is the largest machine of the kind in the State. The machine will dress an 18x30 stick of timber as easily as the sizer commonly used will dress an ordinary 2x4.

The Fordyce Lumber Co., of Fordyce, Ark., has been making a number of improvements in its extensive plant. It has introduced two S. A. Woods planing machines and another boiler to the planing mill. The company has about 7,000,000 feet of yellow-pine lumber on hand, and are enjoying a good trade.

Among the clearances at Wilmington, N. C., last week were the schooner Roger Moore for Cape Hayti with 225,837 feet of pitch-pine lumber, 70,000 feet white-pine lumber and 200 bundles of shingles, and the schooner W. F. Green for Port au Prince with 175,256 feet of lumber and other cargo, both by W. H. Northrop.

The Chadbourn Lumber Co. cleared the schooner Turban for Hamilton, Bermuda, with 161,083 feet of lumber and 5000 shingles.

The Paducah Furniture Co., at Paducah, Ky., has increased its force, and is running night and day to fill orders. Two of the lumber mills of Paducah started up last week, and are running with two-thirds force, and the Veneer Mills Co., whose plant was recently destroyed by fire, is now rebuilt and running regularly.

At a meeting of the Michigan Maple Association, sometimes called the Hardwood Lumber Trust, held at Traverse City, Mich., on the 9th inst., the price of maple lumber was \$100 a thousand feet, and all grades to a basis of \$10 a thousand for the log run. The amount of maple lumber now held by members of the association was reported as 14,778,000 feet.

Judge John A. Orr, a prominent attorney of Mississippi, and Chancellor Fulton, of the University of Mississippi, have succeeded in securing 126,000,000 feet of timber in Jackson county for the school fund of the State. The timber land secured is situated three miles from the Gulf & Ship Island Railroad, and fifteen miles from the Mobile, Jackson & Kansas City road.

The Beaver Creek Lumber Co., on the line of the West Virginia Central & Pittsburg Railway, has bought a large tract of timber land at Hastings, below Davis, W. Va., upon which it has erected a lumber mill, which is now in full operation. The Blackwater Boom & Lumber Co., on the same line of road, is crowded with orders, and considers the outlook very promising.

The Darien Gazette says the rivers and creeks in the up country are all reported to be "full to the brim," and that means that timber by the million may be expected down during the coming ten days. The Ohopee is up, and much lumber from that section is expected. A number of sawn rafts have already come down from the Ohopee, and much more is expected in the next day or two.

A syndicate composed of New York capitalists has purchased 8000 acres of land on Tellico river, in Tennessee, near the North Carolina line, and is extending the Athens & Tellico Railway up the river to it. The extension of the road will open up a large tract of land covered with walnut, cherry, mountain birch, beech, maple, white pine, oak, poplar and other timber heretofore unavailable.

At Cordele, Ga., the lumber business is exceedingly active, and all the mills in that section are at work and on full time. It is said that since the election the demand has increased 200 per cent. The daily output is now 1,100,000 feet. Of this amount, 500,000 feet reaches the market by all-rail and 600,000 feet goes out at the ports. Prices for all desirable grades of lumber are firm and higher, with prospects of another advance after the 1st of January.

The property of the Seaboard Manufacturing Co. at Fairford, Ala., was sold last week at St. Stephens, Washington county, Alabama, for \$156,900. Messrs. James L. Lombard, Sanford B. Ladd and Frank Hagerman, for the bondholders, were the purchasers. The property sold comprises about 150,000 acres of pine lands in Mobile and Washington counties, the entire plant of the Seaboard Manufacturing Co., together with all its standing timber, logs and lumber in stock and stumpage and 216 \$1000 bonds of the Seaboard Railroad Co.

The Mutual Lumber Co., an organization of Louisiana and Mississippi yellow-

pine saw-mill men, held a meeting last week in New Orleans, being its regular monthly gathering, to discuss the situation. The opinion among those present was that the indications for future business were very bright and satisfactory. Those present were: President, M. R. Grant; first vice-president, J. J. White; second vice-president, George S. Gardner; third vice-president, J. J. Newman; secretary, Philip A. Orr; treasurer, Henry Wellman, and Messrs. W. W. Carre, J. C. Enochs, J. H. Hinton, Geo. S. Richy, H. S. Sweet, A. W. Stevens and M. Mallard.

The factory of the Withington-Russell Co., at Nashville, Tenn., was almost totally destroyed by fire on the 7th inst. The firm is one of the most extensive manufacturers of agricultural implements in that section. The estimated loss on the buildings and stock is about \$125,000. The insurance carried was about \$50,000. A meeting of the stockholders will be necessary before a decision is made as to whether the company will rebuild and resume operations. The company is a stock company, composed of Northern capitalists, all of whom live at Jackson, Mich. W. H. Withington is president, and P. W. Withington, secretary, with T. H. Russell, vice-president and general manager.

Among the clearances during the past week at Jacksonville, Fla., the following lumber cargoes were reported: Schooner John S. Deering with 369,000 feet of yellow-pine lumber; Hattie Dunn with 334,000 feet, and John W. Hall with 290,000 feet, all for New York. The schooner Mary J. Russell cleared for Irvington, New York, with 360,000 feet of cypress lumber, loaded at Palatka and towed to Jacksonville by the Wilson Cypress Co. The Clyde steamers Algonquin with 400,000 feet of lumber, 3000 crossties, 100,000 shingles and other merchandise, Seminole with 250,000 feet of lumber, 3000 crossties, 150,000 shingles and other cargo, and Comanche with 300,000 feet of lumber and other cargo. The schooner Susan W. Pickering cleared for Bridgetown, Barbadoes, West Indies, with 50,000 shingles and 215,894 feet of yellow-pine lumber.

A meeting of the Texas and Louisiana Lumber Manufacturers' Association was held in Houston, Texas, on the 10th inst. The meeting was called for the purpose of considering a number of questions relating to the industry, and the sessions were held behind closed doors. It was the opinion of members present that they had enjoyed more trade during November than for both the months of September and October of this year. The reports submitted at the meeting showed an improved condition of trade all over the State. At the afternoon session the association took up the question of tariff on lumber and elected the following delegates to the lumber tariff convention, which meets at Cincinnati on the 15th inst.: Messrs. W. E. Ramsay, of the Bradley-Ramsay Lumber Co., of Lake Charles, La.; W. E. Barns, of St. Louis, Mo., and G. H. Mallam, of the Texas Tram & Lumber Co., of Beaumont, Texas. The meeting adjourned to meet in Houston, Texas, the third Tuesday in January.

Pursuant to a call issued by Messrs. J. E. Defebaugh and W. B. Judson, 150 delegates, representing twenty-seven States, met at Cincinnati on Tuesday last in a convention of lumber dealers and manufacturers. A temporary organization was effected, with J. A. Freeman as chairman, and Messrs. Defebaugh and Judson, secretaries. Mr. Freeman made a vigorous speech against the tariff act of 1894 as discriminating against lumber,

and urged the convention to take such action as would secure concessions to the lumber interests in the next tariff bill to be enacted by Congress. The following officers were chosen by the committee on permanent organization: President, C. W. Goodyear, Buffalo; vice-presidents, H. Clay Tunis, of Maryland, and E. F. Skinner, of Florida; secretary, C. W. Wells, Illinois. After considerable discussion as to rates of duty and the recommendation of a committee on ways and means, the following gentlemen were recommended as members of the committee on resolutions: W. B. Mershon, Michigan; A. J. Neimeyer, Arkansas; A. C. Akeley, Minnesota; W. J. Smith, Alabama, and H. Clay Tunis, Maryland. The resolutions recommended by the committee were adopted. They ask Congress to put lumber in the dutiable list, and presented arguments in favor thereof. The convention then adjourned sine die.

#### IRON MARKETS.

Cincinnati, Ohio, December 12.

The pig-iron market the past week has been a quiet one, and no important transactions have occurred. During November some thirteen or fourteen furnaces blew in, creating the impression that the accumulated stocks would be largely augmented, but the reports of December 1 indicate that stocks of all kinds of pig iron went off approximately 32,000 tons during November.

There are evidences that the billet and nail combinations are not dead nor sleeping, but quietly conducting policies that will conserve the ultimate welfare of those great industries.

The feeling obtains generally that the coming year is to be one of great prosperity, and during the quiet period prevailing preparations are being made for the expanded business expected.

Prices current are somewhat irregular, owing to the presence on the market of some warehouse lots and the eagerness of a few furnaces to realize on certain grades that have accumulated, but the speculative buyers are not in the market, and at the close of the week business is almost entirely restricted to the supplying of immediate needs.

We quote for cash f. o. b. Cincinnati:

Southern coke No. 1 foundry	.. \$10 75	@ \$11 00
Southern coke No. 2 foundry	.. 10 25	@ 10 50
Southern coke No. 3 foundry	.. 9 75	@ 10 00
Southern coke, gray forge	.. 9 50	@ 9 75
Southern coke, mottled	.. 9 50	@ 9 75
Southern coke No. 1 soft	.. 10 50	@ 10 75
Southern coke No. 2 soft	.. 10 00	@ 10 25
Belfont coke No. 1, Lake Sup.	.. 12 00	@ 12 50
Belfont coke No. 2, Lake Sup.	.. 11 50	@ 12 00
Hanging Rock charcoal No. 1	.. 15 00	@ 16 00
Tennessee charcoal No. 1	.. 13 00	@ 14 00
Jackson Co. silvery No. 1	.. 13 50	@ 14 00
Standard Alabama car-wheel	.. 14 75	@ 15 50
Tennessee car-wheel	.. 13 50	@ 14 50
Lake Sup. car-wheel & mall'e.	.. 14 75	@ 15 25

New York, N. Y., December 12.

Another quiet week has passed, and the prospects are that there will be little or no improvement this month. The complete absence of speculative spirit from every department of trade prevents buying, except for present needs, and these for the most part have been supplied by purchases in October and November. Foundries generally are closing up a year that has been far from satisfactory, and the courage and very often the means are wanting wherewith to enlarge operations, even if conditions seem to warrant it. There is every reason to expect that the trade will feel no impetus until the plans for construction that are taking shape in engineers' and architects' offices begin to take the form of contracts. That this will come in large measure between now and spring no one doubts. The abundance and cheapness of money cannot long fail to stimulate new investments and enterprises, which in turn will form a good foundation on which to build an iron market.

Discussion in iron and steel centres

upon trade combinations and pools. It is believed by many that the steel-rail pool, which has generally been regarded as a dead weight on the iron industry in the United States, is nearing its end. The demands of the smaller members of the pool, and of would-be competitors outside, have grown so enormous that the inevitable result seems to be near. A drop of \$8 or \$10 a ton in steel rails would unquestionably be followed by very heavy buying by American roads and lead to large business abroad. The effect of this upon all departments of the trade would be stimulating.

We make no change in prices, which are firmly held by both Northern and Southern furnaces, though actual transactions are confined to small lots.

We quote for cash f. o. b. docks or cars New York:

No. 1 X standard Southern	..	—@ \$12 00
No. 1 X Virginia	..	—@ 12 00
No. 2 X Alabama or Virginia	..	—@ 11 50
No. 1 soft Alabama or Virginia	..	—@ 11 50
No. 1 X lake ore coke iron	..	—@ 13 50
No. 2 X lake ore coke iron	..	—@ 13 00
Lake Superior charcoal	..	—@ 16 35

St. Louis, Mo., December 12.

Business is running along in usual channels without much animation. Car works are numbered among the most important melters of pig iron in this district, and until they secure orders for cars the tonnage of sales here will be moderate. The large stove concerns covered their wants some months ago, and do not expect to buy until next year.

It is reported that iron has been offered during the past few days at prices considerably under current quotations.

We quote for cash f. o. b. St. Louis:

Southern coke No. 1	..	—@ \$11 50
Southern coke No. 2	..	—@ 11 00
Southern coke No. 3	..	—@ 10 50
Southern gray forge	..	—@ 10 25
Tennessee charcoal No. 1	..	—@ 13 75
Lake Superior coke No. 1	..	—@ 14 00
Lake Superior car-wheel	..	—@ 15 25
Southern car-wheel	..	—@ 15 75
Genuine Connellsville coke	..	—@ 4 55
West Virginia coke	..	—@ 4 25

Philadelphia, Pa., December 12.

Another uneventful week in iron is to be recorded. Consumption continues at about the same rate, but purchases are mostly for small amounts and quick delivery. Nothing has occurred to shake our confidence in a healthy revival during the first half of 1897.

We quote for cash f. o. b. Philadelphia docks:

No. 1 X standard Alabama	..	—@ \$12 00	
No. 2 X standard Alabama	..	—@ 11 50	
No. 1 X standard Virginia	..	—@ 12 00	
No. 2 X standard Virginia	..	—@ 11 50	
No. 1 X lake ore iron	..	—@ 13 50	
No. 2 X lake ore iron	..	—@ 13 00	
Lake Superior charcoal	..	—@ 15 85	@ 16 35
Standard Georgia charcoal	..	—@ 16 25	@ 17 00

ROGERS, BROWN & CO.

#### Oil in Texas.

A dispatch from Sour Lake, Texas, states that experts have been examining the quality of the oil discovered in that locality, and report that it is of high standard. One of the experts, W. E. Chilton, of West Virginia, states that its lubricating power is ten degrees higher than any other oil yet known, and that it will stand extreme changes in temperature remarkably well. Mr. Chilton has examined the country in the vicinity of Sour Lake, and thinks that oil may be found in Jasper county, near the town of the same name. It is reported that the Sour Lake Oil Co. may construct a pipeline to carry it to the railroad or the sea-coast.

A dispatch from Galveston, Texas, states that a contract has been awarded for the new elevator for the Galveston Wharf Co., which is to cost \$200,000. James Stewart & Co., of St. Louis, who also have an office in New Orleans, who built the large elevator at New Orleans for the Illinois Central Company, has secured this contract. The elevator will hold 750,000 bushels of grain.

#### COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

#### The Market for Cottonseed Products.

New York, N. Y., December 15.

Market conditions are in the main unchanged, a weaker tone being in evidence as compared with those of a week ago, however, and prices are a shade lower. It is the opinion of some members of the trade here that prices will not further recede, and that a reaction will shortly take place, while, on the other hand, there are not wanting those who take a pessimistic view of the outlook for a protracted period ahead. At present prices for oil, crushers are slow in purchasing seed, and their determination to lower their bids for same will still further check production. The prevailing dullness in exports has doubtless been marked, owing to the high freight rates, while actually tending to depress the market coincidentally. Oil speculatively purchased for export, or intended for export, has in several instances been again marketed by holders, and at lower prices, whose necessities would not permit further delay. Concerning exports, there is no doubt that a very considerable quantity of low-priced English oil has been sold for consumption in Southern Europe, to the disadvantage of American oil. The demand for compound lard has been slow, but in anticipation of a higher duty on lard for Cuba, an increased demand for the former is expected for shipment to that island. The price of compound lard has been reduced in the absence of a demand for either export or home consumption, thus to a corresponding extent depressing cotton oil. January lard options, Chicago, are selling at 3.90 cents, at which price speculators are buying up all offerings. This speculative movement, if successful, will auger well for the future of cotton oil. Tallow is yet weak, and is nominally quoted at 3½ cents. At this price the prospect for cotton-oil consumption in soap-making is to an appreciable extent slight, while the demand for this line is largely supplied by greases at even lower prices. Dock lots consigned for sale on arrival have been disposed of at prices lower than those current, the market being distinctly in buyer's favor. Receipts have been heavy, over 10,000 barrels arriving. Exports aggregate 4400 barrels, three-fourths of which is destined for France. For future shipments to the latter country considerable disappointment prevails among shippers, owing to lack of interest displayed by the Marseilles market, contrary to expectations. Concerning crude, 16 cents is bid at this market, while prime yellow has been sold for February delivery at 23 cents. Lots now arriving are now on offer at latter price for prompt delivery. Herewith we quote the ruling prices: Prime summer white, 23 to 28 cents; butter oil, 27 to 28 cents; prime summer yellow, 23 to 23½ cents; off summer yellow, 22½ to 23 cents; prime crude, 20 to 21 cents; prime crude, loose, 16 to 17 cents; off crude, 19 to 20 cents, and soap stock, ½¢.

Cake and Meal.—The demand continues of a fair character, whether for export or home consumption. Concerning the former, the demand from the continent very largely exceeds that from the United Kingdom, the latter having materially receded. It is feared the heavy shipments of natural feeding stuffs will operate against the consumption of mill-feeding stuffs abroad. A shipment of 4898 bags of seed is reported from Charleston to Liverpool.

An arrival of 1000 bags of meal is reported here and seventy-five tons in Boston, former quotations prevailing.

#### Cottonseed-Oil Notes.

The first consignment by the Shreveport Cotton Oil Co., at Shreveport, La., has been secured by the Shreveport & Houston Railway. It will consist of fifty cars of cottonseed meal and oil, destined to Rotterdam via Galveston.

The Memphis market for cottonseed products is quiet, with oils easy at 19½ cents for prime crude, 22 cents for prime summer yellow and 27 cents for choice cooking summer yellow; prime cottonseed meal, \$15 per ton; cottonseed in bulk \$8 by rail and wagon, and sacked seed by river \$7.

The cottonseed-oil mills of Texas continue to report a good demand for cottonseed meal and cake at the recent advance. Prices on these products are \$1.75 per ton higher than at this time last year, being quoted at \$14.25 to \$15.75 f. o. b. at interior mills, according to location. Cottonseed oils show further weakness, and prices are three to three and one-half cents per gallon lower than at this date last year.

The steamship Drummond cleared from Galveston last week for Hamburg with 40,320 sacks of cottonseed meal and 382 barrels of cottonseed oil; the steamship Drumfell for Hamburg with 2401 sacks of cottonseed oilcake and 64,851 sacks of cottonseed meal, and the steamship Powderham for the same port with 415 barrels of cottonseed oil, 2191 sacks of cottonseed oilcake and 65,362 sacks of cottonseed meal.

In New Orleans the market for cottonseed oil is weak; meal and cake are steady; prime crude oil in bulk, 17 to 17½ cents; prime summer yellow in barrels, 22 to 22½ cents; meal, \$16.75 to \$17 per short ton, and cake, \$18.75 to \$19 per long ton for export. Receivers' prices for cottonseed products are as follows: Cottonseed, \$7 per ton of 2000 pounds net to the mills, no commission of any kind to be added; cottonseed meal jobbing per carload at depot, \$16.50 to \$16.75 per short ton of 2000 pounds; for export per long ton of 2240 f. o. b., \$18.50 to \$18.75 for current month; oilcake for export, \$18.50 to \$18.75 per long ton f. o. b.; crude cottonseed oil at wholesale or for shipment, strictly prime in barrels per gallon, 19 to 19½ cents; loose, per gallon, 17½ to 18 cents, according to location of mill; refined cottonseed oil, prime in barrels per gallon at wholesale or for shipment, 23 to 24 cents; cottonseed hulls delivered per 100 pounds, according to location of mill, 11½ to 20 cents; foots, 1 to 1½ cents; linters, according to style and staple—A, 3½ to 4 cents; B, 3½ to 3¾ cents; C, 3½ to 3½ cents; ashes, none.

The extensive improvements to the Old Dominion Mills, near Richmond, Va., are rapidly nearing completion, and it is expected that operations will soon be commenced. The new owners, recently reported in these columns, are Messrs. John A. Smith, Alfred G. Bishop, Sr., Alfred G. Bishop, Jr., John A. Pinchback and Henry A. Haines, recently incorporated as the Richmond Cotton Mills, as stated at the time, and will operate under that name. Mr. Smith, who is of Bessemer City, N. C., will be president of the corporation for the first year. Capital stock is placed at \$200,000, and a clause in the charter provides for the construction of new mills in the future.

If you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send us a postal card giving the character of machinery needed.

## PHOSPHATES.

#### Phosphate Markets.

Office Manufacturers' Record,  
Baltimore, Md., December 17.

The local trade in phosphate shows very little improvement, and just at this period of the season very little business is expected until after the new year. Manufacturers are not in the market, and the inquiry from out-of-town buyers is limited. From points of production the conditions remain unchanged, while operations among river miners of South Carolina are limited. There is some activity among land miners, and prices are nominally steady. At the mines crude phosphate is quoted at \$3; hot-air-dried \$3.25 Ashley river, and \$3.45 Charleston city. The development in Florida is being carried on with considerable vigor in the pebble district, but among hard-rock miners the operations are carried on merely to fill old contracts. Tennessee miners are not very active, as their operations are restricted by the inclemency of the weather. It is stated that considerable phosphate will go abroad this winter, and already there is a good inquiry for vessels, as reported below. The receipts of phosphate rock in the local market for the month of November were 6881 tons, of which 5316 were from South Carolina and 1565 from Florida, against 9193 tons for the corresponding month last year. The schooner J. C. McFadden was chartered yesterday to Port Tampa for orders. The freight market in New York closed rather quiet on the 15th inst. There is more inquiry for phosphate tonnage from the South, with shippers bidding 16/ to 17/ from Fernandina and Tampa to United Kingdom or Continent. The phosphate charters reported for the week are as follows: Schooner Senator Sullivan from Galveston to Norfolk with guano at \$2.65; British steamer Lowlands from Fernandina to Hamburg with phosphate at 16/3, February; British steamers Titanic, 1024 tons, and Torgorm, 1065 tons, from a Southern port to the United Kingdom or Continent with phosphate on private terms; British steamer Twilight, 1224 tons, from Fernandina to Rotterdam with phosphate at 15/9, February-March, and a ship from Coosaw to Yokohama with phosphate at 29/6.

#### Fertilizer Ingredients.

The market for ammoniates is surrounded by no features and business is rather quiet, with prices weak, both buyers and sellers being widely apart in their views. The bulk of the business is from Southern buyers. The Western situation is unchanged, and stocks are generally ample for all the demand existing, while prices are rather easier. Nitrate of soda is firm, with offerings moderate.

The following table represents the prices current at this date:

Sulphate of ammonia (gas)...	\$2 25	@	—
Nitrate of soda.....	2 00	@	—
Blood.....	—	@	1 80
Hoof meal.....	1 65	@	1 70
Azotine (beef).....	1 65	@	1 70
Azotine (pork).....	1 70	@	1 75
Tankage (concentrated).....	1 65	@	1 70
Tankage (9 and 20).....	1 70	and	10
Tankage (7 and 30).....	15 00	@	16 00
Fish (dry).....	20 00	@	—
Fish (acid).....	11 00	@	12 00

#### Phosphate and Fertilizer Notes.

The plant of the Spartanburg Fertilizer Co., of Spartanburg, S. C., is about completed, and will be in active operation this week.

Large shipments of fuller's earth are being made from Quincy, Fla., lots amounting to nearly 700 tons being shipped monthly.

At a meeting of the directors of the Americus Guano Co., of Americus, Ga., on the 10th inst. a dividend of 10 per cent. was declared on the capital stock of

\$100,000. The company also has a surplus of \$100,000, and is a most successful enterprise.

The Southern Phosphate Co.'s plant, at Macon, Ga., is now in complete order and operating on an extensive scale, being among the best equipped in the South.

The S. G. Webb chemical plant at Richmond, Va., was almost destroyed by fire on the 6th inst. These works have recently been established and were working at full blast. There was \$3000 insurance on the building and a like sum on the stock, which it is thought will cover the entire loss.

The schooner Aloho sailed from Port Tampa on the 11th inst. for Mantua creek, New Jersey, with 938 tons of pebble phosphate from the Bone Valley Phosphate Co., and the schooner Henry P. Mason was loading phosphate at Fernandina on the 12th for Elizabethport, N. J., and the steamer Illiria loading 2000 tons phosphate for Trieste.

The Rasin Fertilizer Co., of Baltimore, will on December 31, 1896, redeem and cancel its \$100,000 of preferred stock. Under the agreement executed when the stock was issued, the company reserved the right to redeem it at any time at 105 and interest. The par value of the shares is \$50, and the redemption price will be \$52.50 per share and interest from October 1, 1896.

The following steamers cleared last week from Savannah having phosphate rock among their cargoes: Steamships Arabian Prince for Bremen and Antwerp with 1646 tons for the latter port, Planet Mercury for Bremen with 1973 tons, Vera for Bremen with 1600 tons and White Jacket with an entire cargo of 3085 tons of phosphate rock for Kastrup, Denmark, cleared by Strachan & Co.

The schooner Warner Moore cleared from Charleston, S. C., last week with 600 tons of phosphate rock for Richmond, Va., and the schooner is chartered to load with phosphate rock at Charleston for Baltimore. The total clearances of phosphate rock from the port of Charleston, S. C., since September 1 amount to 25,863 tons domestic and 1200 tons foreign, against 35,993 tons domestic for the same period last year.

The shipments of phosphate rock from the port of Fernandina, Fla., for the month of November were as follows: Steamship Atlantic with 3226 tons for Hamburg, by J. H. Packard; schooner Bertha Warren for Cartaret, N. J., with 653 tons, by Dunnellon Phosphate Co., and steamship Hallamshire for Memel with 1450 tons, by B. Arentz & Co.; total, 5329 tons; previously reported for eleven months ending October 31, 119,177 tons, making a grand total for eleven months of 124,506 tons. The schooner Henry P. Mason cleared from Fernandina for Elizabethport, N. J., on the 10th inst. with 1000 tons of phosphate rock from the Dunnellon Phosphate Co. The steamship Illisia is chartered to load a cargo of phosphate rock this month by A. Newman.

The phosphate shipments from Port Tampa, Fla., for the month of November were as follows: Steamship Istria for Venice with 1243 tons of rock and steamship Sandfield for London with 2008 tons of rock and 640 tons of pebble, by the Anglo-Continental Guano Works; schooner Warren Adams for Philadelphia with 934 tons of pebble, by the Bone Hill Consolidated Phosphate Co.; schooner Walter W. Rasin for Cartaret with 1002 tons of rock, by Bradly Fertilizer Co.; steamship Simonside for Stettin with 4264 tons of rock, by Abe Newman; steamship Athalie for Stettin with 2697 tons of rock and bark Vibing for

Ghent with 1188 tons of rock, both by J. Buttgenbach; barkentine James W. Elwell, by Palmetto Phosphate Co., and Louis McLane for Cartaret, N. J., with 1090 tons of pebble and 661 tons of rock; schooner John K. Souther for Baltimore with 1470 tons of pebble, and schooner Charles K. Schall for Wilmington, Del., with 1205 tons of pebble, both by Palmetto Phosphate Co.; total, 18,404 tons.

The Southern Railway reaches many resorts in the South which are very attractive to the sportsman; consequently a description of these points is of much value to all who may be interested in what they can shoot on Southern hunting grounds. A book called the "Happy Hunting Grounds, also Fishing, of the South" has just been published by the company, which presents this information in an attractive way. The book is also very artistically illustrated.

#### Modern Marine Machinery.

Complete outfitts in either single or twin screw, side or stern paddle wheel machinery, built by Marine Iron Works, No. 9 Dominick street, Chicago. Catalog free.

#### A Report Denied.

General Manager W. M. Greene, of the Baltimore & Ohio, says that there is no truth in the report that the B. & O. is back of the Benton Harbor & Southeastern, now under construction, and the Cincinnati, Union City & Huntington Railroads, which is being located in Indiana.

#### A Good Record.

Fast freight train No. 94, which makes the run from Chicago to New York in six hours over the B. & O., has been on time on an average of nine out of ten days the last three weeks. The success of these fast freights has encouraged the management to such an extent that other trains are contemplated.

#### Pennsylvania Railroad to Issue Clerical Orders.

The Pennsylvania Railroad Co. announces that for 1897 it will issue clerical orders to regularly ordained clergymen in charge of churches located on or near its lines east of Pittsburg and Erie. To secure these orders clergymen should make application to the nearest ticket agent as soon as possible, as it is desired that all applications reach the general office by December 15.

#### Of Interest to Manufacturers.

The Baltimore & Ohio Southwestern Railway, extending from Parkersburg, W. Va., through Southern Ohio, Indiana and Illinois to St. Louis, with direct connection to all principal points in the United States, is making particular endeavor to induce the location of factories on the line of its road, and has arranged for co-operation on the part of the towns located on it.

Correspondence with manufacturers desiring location is solicited. Address Geo. F. Randolph, General Traffic Manager, Cincinnati, Ohio.

#### C. H. & D. 1000-Mile Tickets Only \$20.

Are good on the following railroads: Louisville, New Albany & Chicago; Michigan Central between Toledo and Detroit; Terre Haute & Indianapolis; Peoria, Decatur & Evansville; Indiana; Decatur & Western; N. Y., P. & O. Div. Erie; Dayton & Union; Findlay, Ft. Wayne & Western; New York, Chicago & St. Louis; Toledo, St. Louis & Kansas City; Balt. & Ohio west of Pittsburg and Benwood, and between Pittsburg and Wheeling; also between Indianapolis and Washington, D. C., via Cincinnati and Parkersburg, for continuous passage; B. & O. Southwestern; Cleveland Terminal & Valley; Pittsburg & Western; Columbus, Hocking Valley & Toledo; Cleveland, Lorain & Wheeling; Chicago & Southeastern; Wheeling & Lake Erie; Columbus, Sandusky & Hocking; Pittsburg, Shenango & Lake Erie; Cincinnati, Jackson & Mackinaw; Ohio Central lines; Cleveland, Canton & Southern; Ohio Southern; Lima Northern; and will be accepted in payment for excess baggage, also for seats in the C. H. & D. Ry. Parlor Cars, and for Bridge Tolls into St. Louis.

# CONSTRUCTION DEPARTMENT.

**THE MANUFACTURERS' RECORD** seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

\* Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in any town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and even then they must expect the return of some letters, because of the lack of knowledge on the part of postmasters of all new companies. Criticisms and complaints are invited, as they will the better enable us to guard against errors.

#### ALABAMA.

Athens—Water Works.—The city will issue bonds for \$15,000 to construct the proposed water works. Arrangements will be made in the near future for the awarding of contracts. Address Thomas C. McClellan, mayor.\*

Birmingham—Cooperage Plant.—J. W. Hardesty, formerly of Montgomery, will establish a large cooperage plant in Birmingham.

Greenville—Cotton Mill.—A movement is on foot for the organization of a company to erect a cotton mill. Subscriptions are now being solicited. H. D. Lampley can be addressed for information.

Heflin—Copper Mines.—The Copper Hill Mining Co., reported last week, has applied to the legislature for a charter; capital stock placed at \$3,000,000. D. W. Detrick is superintendent of the company's operations, which consist of copper-deposit developments in Talladega and Randolph counties. The ores will be mined, smelted, milled, etc.

Mobile—Wharf Improvements.—The Mobile & Birmingham Railroad is having plans prepared for its contemplated wharf improvements; T. G. Bush, president.

Mobile—Excelsior Factory.—E. M. Wheeler has re-established his excelsior factory which was recently burned. Capacity will soon be increased and new location secured.\*

Montgomery—Cotton Mill.—The People's Cotton Factory buildings are nearly completed, and the machinery, to consist of 10,000 spindles and 320 looms, will be put in next month.

New Decatur—Machine Shops.—The Louisville & Nashville Railroad Co. (J. G. Metcalfe, general manager, Louisville, Ky.) will double the capacity of its shops at New Decatur. Plans and specifications for new buildings have been approved and contracts for erection will be awarded shortly; A. Beckari, master mechanic at New Decatur.

Russellville—Iron Mines.—The Sheffield Coal, Iron & Steel Co. has leased and will

develop the iron mines of the Franklin Mining Co.

Sheffield—Iron Furnace.—The Sheffield Coal, Iron & Steel Co. writes that it has let contract for all material for relining and remodeling its No. 2 furnace, and will blow in by February 1.

#### ARKANSAS.

Fayetteville—Water-power Plant.—The Fayetteville Electric Railroad Co., John A. Griffin, president, will build a water-power plant to furnish power for its railway.\*

Fort Smith—Lumber Company.—William Blair and others have incorporated the Fort Smith Lumber Co., with a capital stock of \$60,000.

Hamburg—Marl Lands.—It is reported that F. M. Etheridge has discovered an extensive deposit of marl near Hamburg.

Little Rock—Zinc Mines.—It is reported that H. H. Gallup, manager of the Arkansas Mining Co., has closed negotiations for the sale of the Morning Star zinc mines in Marion county to Illinois capitalists for \$205,000.

#### FLORIDA.

Jacksonville—Transfer Company.—P. E. McMurray and others have incorporated the McMurray Livery & Transfer Co., with a capital stock of \$15,000.

St. Augustine—Laundry.—Geo. L. Maddy, of Albany, Ind., contemplates establishing a steam laundry at St. Augustine.

West Tocoi—Turpentine Still.—Sweat & Durham will establish a turpentine still.

#### GEORGIA.

Albany—Ice Plant.—The Albany Artesian Ice Co. contemplates adding a 10-ton compression ice machine to its plant.\*

Americus—Steam Laundry.—John B. McGarrah contemplates the establishment of a steam laundry.

Athens—Cotton Cord and Rope Mill.—The Mallison Braided Cord Co. will put in machinery for manufacturing back band webbing, etc.\*

Bainbridge—Electric-light Plant.—S. Nussbaum contemplates the establishment of an electric-light plant.

Buford—Cotton Mill.—The erection of a cotton mill is talked of.

Cedartown—Cotton Mill.—The Cedartown Cotton Manufacturing Co., Charles Adamson, president, will endeavor during 1897 to increase capital for a new 20,000-spindle mill.

Columbus—Water Works.—The Columbus Water Works Co. has purchased site for a new standpipe; will extend mains, etc., to supply Rose Hill.

Columbus—Cotton Mill.—The Eagle & Phoenix Manufacturing Co. will put in seventy-five new looms, costing about \$30,000.

Rome—Ice Plant.—The Rome Ice Manufacturing Co. will put in another ice machine of fifteen tons daily capacity; contracts for additions all awarded.

Savannah—Cycle Company.—A. A. Zimmerman, T. C. Darst and D. O. Groff have incorporated the Zimmerman Cycle Co., with a capital stock of \$5000.

Savannah—Railroad Supplies.—F. G. Clark and others have incorporated the Stevens-Clark Co., with capital stock placed at \$35,000, to deal in mill and railroad supplies.

Sparks—Lumber Plant.—The Pinopolis Lumber Co. will remove its plant from Atlanta to Sparks, and operate variety works, door and blind factory, planing mill, etc., employing 175 men.

Villa Rica—Gold Mines.—E. E. Freedman and Asa White, of Villa Rica, and William Phillipson, of Chicago, Ill., have incorporated the Gold City Mining & Milling Co., with a capital stock of \$500,000; purpose, to mine and mill gold ores.

#### KENTUCKY.

Louisville—Lumber Mill.—The Gernert Bros. Lumber Co. has obtained permit to erect a three-story mill building.

Milton—Water Works.—Construction of water works is talked of. The mayor can be addressed.

#### LOUISIANA.

Monroe—Mercantile.—The Sugar Bros. Co. has been incorporated, with capital stock of \$15,000, by Isadore Sugar and others.

New Orleans—Woodenware House.—The J. C. Morris Co.'s burned woodenware house

is to be rebuilt at once, as stated last week. The company does not manufacture, only deals in woodenware.

New Orleans—Pianos, etc.—Philip Werlein and others have incorporated Phillip Werlein, Limited, with capital stock of \$100,000, to deal in and manufacture pianos, etc.

New Orleans—Flour Mills.—It is proposed to organize a company for the purpose of constructing a flour mill of from 250 to 500 barrels capacity daily and a general cereal mill. Over \$100,000 is already available as capital from local parties, who are to control the plant. Experienced Northern millers are to manage the mill. E. B. Williams (201 Hennen Building), acting as agent for those interested, can be addressed for further particulars.\*

Welch—Paper Mill.—There are reports of the erection of a paper mill to utilize rice in manufacturing.

#### MARYLAND.

Baltimore—Foundry, etc.—The Federal Hill Foundry Co., Patrick Kennedy, proprietor, will erect a new plant.

Baltimore—Novelty Works.—The Sinclair-Scott Manufacturing Co. will build a new variety works.

Baltimore—Shoe Factory.—The Baltimore-Harrisburg Shoe Co. has been incorporated, with a capital stock of \$25,000, by Charles A. Disbrow and others.

Baltimore—Engine, Equipment, etc.—The city will appropriate \$24,650 for equipment of a new engine company. Address the mayor for particulars.

Baltimore—Tannery.—Matthew S. Tyson and Anthony M. Tyson, of Baltimore; Geo. Birely and Lewis Birely, of Frederick county, Maryland, and Ernest H. Chalkley, of Richmond, Va., have incorporated the Baltimore Leather Co. to manufacture and deal in leather, etc.; capital stock \$10,000.

Baltimore—Machine Shops.—The Baltimore & Ohio Railroad Co. has awarded contract to Walsh & Bro. for the erection of a large erecting shop at Mt. Clare. The shop will be 300x75 feet in size, and considerable machinery will be installed, including a 100-ton electric crane, etc.

#### MISSISSIPPI.

Forrest—Water Works.—The city contemplates constructing water-supply plant. The mayor can be addressed.

Grenada—Water and Light Works, etc.—J. B. Sanders, civil engineer, has made a full report on the proposed water works, electric-light plant and sewer system which the city contemplates; cost is estimated at \$43,200. Address the mayor.

#### MISSOURI.

Caverna—Flour Mill.—Mr. Jackson will probably put in rolls to replace burrs.

Downing—Creamery.—F. S. Aullins, J. L. Donaldson and G. W. Cox have incorporated the Downing Creamery Co., with a capital stock of \$3825.

Franklin—Water Works.—The report of water works being contemplated is incorrect.

Kansas City—Flour Mill.—Atchison (Kans.) capitalists will form company to build a 500-barrel flour mill in Kansas City. E. G. Blair, representing the interested parties, is in Kansas City investigating.

Odin—Flour Mill.—Newton & Trusty will build a flour mill.

Slater—Water Works.—The city will hold an election in February to vote on the proposed bonds for water supply. Address the mayor.

St. Joseph—Bar and Axle Works.—George T. Walker is organizing a company to put in operation the St. Joseph Bar and Axle Works, and the addition of horse-shoe machinery is contemplated.

St. Louis—Laundry.—John F. Wehnert and others have incorporated the Broadway Laundry Co., with a capital stock of \$15,000.

St. Louis—Refrigerating Plant.—Albert Ruemmler and others have incorporated the Ruemmler-Siebert Refrigerating Co., with a capital stock of \$50,000.

St. Louis—Floral Company.—Charles G. Fleckenstein and others have incorporated the Fleckenstein Floral Co., with a capital stock of \$2500.

St. Louis—Pipe Company.—William M. Castillo and others have incorporated the

Wm. M. Castillo Tobacco Pipe Co., with a capital stock of \$2000.

St. Louis—Packing Company.—Frederick Krey and others have incorporated the Krey Packing Co., with a capital stock of \$50,000.

St. Louis—Box Factory.—Paschall Carr and others have incorporated the Borlinghaus Box Manufacturing Co., with a capital stock of \$10,000.

St. Louis—Shine Company.—The Floor Shine Co. has been incorporated, capital stock \$20,000, by W. F. Williamson and others.

St. Louis—Ice Plant.—Edw. Hemminghaus and others have incorporated the Hemminghaus Ice & Coal Co., with a capital stock of \$40,000.

St. Louis—Commission.—F. W. Brockman and others have incorporated the F. W. Brockman Commission Co., with a capital stock of \$25,000.

Stillwater—Valve Works, etc.—George H. Atwood, Samuel O. Jones and Newall Clapp have incorporated the Atwood & Jones Manufacturing Co. for the purpose of making piston valves, automatic self-registering measuring devices, etc.; capital stock \$25,000.

#### NORTH CAROLINA.

Chapel Hill—Ice Plant.—J. A. Duke contemplates erecting an ice plant.\*

China Grove—Cotton Mill.—The Patterson Manufacturing Co. has completed its new mill and ordered 5000 spindles and supplementary machinery.

Claremont—Flour Mill.—J. W. Setzer will probably put in new rolls, etc.

Greenleaf—Grist Mill.—W. A. Deans & Sons will build a grist mill.

Milledgeville—Bridge.—Richard Eames, Jr., and associates, of New London, N. C., contemplate the construction of a bridge (iron) across the Yadkin river.\*

Mountain Island—Cotton Mill.—The W. J. Hooper Manufacturing Co. writes that the report of its contemplated enlargement is not true.

New London—Cordage Factory.—O. Littman has leased the New London cordage factory and put it in operation; will put in electric-light plant.

Raleigh—Steel Bridge.—The Virginia Bridge & Iron Co. is erecting a steel bridge over South street for the Southern Railway Co.

Raleigh—Publishing Company.—A \$20,000 stock company has been organized to publish a daily newspaper by C. M. Kenyon and others.

Reidsville—Tobacco Factory.—The factories of F. R. Penn & Co. and Watt, Penn & Co. have consolidated as the Penn-Watt Tobacco Co., with a capital stock of \$200,000, and will operate. The output for the coming season will be over 1,000,000 pounds of plug.

Waxhaw—Cotton Mill.—Rodman & Heath will build the cotton mill reported last week as contemplated. Erection of the buildings will soon be commenced. An equipment of 10,000 spindles for untwisted yarns or 7500 spindles with twisters will be put in.

Waynesville—Tannery.—The Junaluska Leather Co. will build a tannery.

Winston—Tobacco Factory.—The Brown Bros. Tobacco Co. has secured a building and resumed operations manufacturing tobacco pending the erection of a new building to replace its plant which was burned. Four hundred hands are employed.

#### SOUTH CAROLINA.

Abbeville—Water Works.—The city is now advertising for bids on its water works. Contract will be let next month and work commenced; Pownall & Minshall, of New York city, engineers.\*

Abbeville County—Beet-sugar Factory.—It is proposed to erect a beet-sugar factory, at a cost of several hundred thousand dollars, to utilize the sugar beets to be cultivated by the colony which the Hartman Colony Co. will locate. It is proposed to generate electricity by water-power in order to operate the factory. Julius Hartman, of Atlanta, Ga., is interested in the company. Letters care of Wm. P. Calhoun will be forwarded.

Chesterfield—Telephone System, etc.—The Chesterfield Telephone & Telegraph Co. has been incorporated.

Chesterfield—Telephone Lines, etc.—The Chesterfield Telephone & Telegraph Co. has

been incorporated, with J. A. Welsh, president; G. J. Redfearn, secretary-treasurer.

Edgefield—Cotton Mill.—The Edgefield Cotton Manufacturing Co. is pushing the completion of its mill building and will soon install its equipment. Five thousand spindles and 175 looms will be put in at the start, with the intention of doubling in the near future. About 125 operatives will be employed.

Oconee—Mercantile.—C. W. Pitchford and others have incorporated the C. W. Pitchford Co. for mercantile purposes.

Spartanburg—Knitting Mill.—The Spartanburg Knitting Mill Co. has been incorporated, with a capital stock of \$10,000, to establish a plant; J. J. Gentry, president, and D. C. Correll, secretary.

Williston—Knitting Mill.—Green & Son will put in machinery for making yarns.

#### TENNESSEE.

Bristol—Electric Plant.—Albert Partlett and others have incorporated the Consumers' Electric Light Co.

Chattanooga—Gold Mining.—C. E. James, H. S. Chamberlain, J. F. Tarwater, Franklin Harris and O. L. Hurlbut have incorporated the Randolph Gold Mining Co. to mine gold and other ores.

Covington—Mercantile.—T. B. Leslie and others have incorporated the Gift-Kinney Grocery Co.

Fayetteville—Abattoir.—James Rhodes and George C. Goodrich have commenced the erection of an abattoir, to have daily capacity of 125 hogs.

Gallatin—Flour Mill.—Holder, Brown & Co. contemplate erecting a 50-barrel flour mill.\*

Harriman—Rolling Mill.—W. B. Crinkley, of Warrenton, N. C., has purchased the Harriman Rolling Mill. If sale is confirmed plant will be operated.

Johnsonville—Transportation Company.—William F. Tunk and others have incorporated the Southern Transportation Co.

Knoxville—Telephone Improvements.—The East Tennessee Telephone Co. is preparing to expend \$15,000 in improving and extending its Knoxville lines and plant.

Knoxville—Fire-extinguisher Works.—The Marble City Fire Extinguisher Co. contemplates removing its plant to another city, possibly Middlesborough, Ky. If the removal is decided upon the manufacture of chemical engines will be added to the product.

Louisville—Marble Mill.—A Mr. Shook, of Pennsylvania, has leased the Poorbaugh & Jeffreys quarries at Louisville and will develop same; will erect a marble mill. Eastern capital is said to be interested.

Nashville—Implement Works.—The Withington & Russell Manufacturing Co. is making arrangements to rebuild its implement plant, which was burned last week.

Obed—Saw Mill.—The Obed Manufacturing Co. will rebuild next summer its burned saw-mill; expect to erect a plant of 50,000 feet capacity daily and a 12,000 feet dry-kiln.

Obion—Flour Mill.—A flour mill will be built.

Soddy—Coal Mines.—The Soddy Coal Co. is sinking a new shaft and putting in machinery for developing same.

#### TEXAS.

Alief—Cotton Gin.—W. B. Jones, of Frost, will build a cotton gin in Alief.

Alvarado—Mercantile.—J. C. Phelan, H. J. Goldberg and Sidney Martin have incorporated the Pope & Costolo Co., with capital stock of \$20,000.

Aransas Pass—Cannery, Power Plant, etc. The Aransas Manufacturing & Construction Co. is organized for the purpose of constructing a central power plant, and some machinery has already been purchased. It is expected to operate a cannery of 15,000 cans capacity from this plant; also a 500 incandescent-lighting plant, 10-ton ice plant and a steam laundry.

Beaumont—Telephone System.—The East Texas Telephone Co., incorporated last week, has let contract for the construction of its line from Beaumont to Sabine Pass, Port Arthur and Orange, a distance of sixty miles; incorporators, T. E. Spottswood, C. E. Cundy, C. E. James and C. A. Epping.

Bowie—Electric Plant.—T. C. Phillips, A. E. Thomas and J. N. Graves have incorporated the Bowie Light Co., with a capital stock of \$15,000, to operate electric-light plant, etc.

Bristol—Iron Furnace.—The Home Iron Co., by its trustees, has bought the Bristol iron furnace. If court confirms sale the plant will be blown in.

Dallas—Publishing Company.—Ross Winn, M. E. Paddock and A. P. Foster have incorporated the Industrial Publishing Co., with a capital stock of \$30,000.

Danville—Paper-box Factory.—It is said that Garrett D. Groves, of Baltimore, Md., contemplates establishing a paper-box factory in Danville.

El Paso—Meat-supply Company, etc.—The J. H. Nation Meat & Supply Co. has been incorporated, with a capital stock of \$10,000, to slaughter and refrigerate meats, conduct cannery, etc.; incorporators, J. H. Nation, W. W. Turney, M. W. Santon and Ira M. Nation.

Galveston—Grain Elevators.—The Galveston Wharf Co. has let contract to James Stewart & Co., of St. Louis, Mo., for the construction of the grain elevator recently announced. The elevator will have capacity of 750,000 bushels and cost about \$200,000.

Galveston—Copper-smelting Plant.—It is stated that the Kansas City Consolidated Smelting & Refining Co., P. J. Hyde, superintendent, Kansas City, Mo., will establish in Galveston a plant for sampling, smelting and refining copper matte. A site is now being sought, and arrangements for putting in machinery will soon be made.

Georgetown—Mercantile.—W. E. Chapman and others have incorporated the Chapman Hardware Co., with a capital stock of \$25,000.

Houston—Infirmary Company.—The Houston Infirmary Sanitarium has been incorporated, with a capital stock of \$30,000, by D. F. Stuart, H. B. Rice and T. J. Boyles.

Houston—Brewing Plant.—The American Brewing Co. will expend \$20,000 in improvements to its brewing and ice plant.

Waco—Ice Plant.—The Anheuser-Busch Brewing Association (main office, St. Louis, Mo.) will erect a 100-ton ice-plant addition to its brewery at Waco.

#### VIRGINIA.

Coeburn—Coke Plant.—The Dora Furnace Co., of Pulaski, Va., George L. Carter, manager, has acquired a controlling interest in the Toms Creek Coal & Coke Co., at Coeburn. Fifty new coke ovens will be constructed and a large warehouse built.

Culpeper—Ice and Electric-light Plants.—Construction of an ice plant and electric-light plant is talked of. Jeffries Bros. can probably give information.

Norfolk—Real Estate.—The Virginia Investment Co. has been incorporated, with capital stock of \$10,000, to deal in real estate; John T. Griffin, president.

Norfolk—Grain Elevator.—It is rumored that the Norfolk & Western Railroad Co. (J. H. Sands, general manager, Roanoke, Va.) will build a grain elevator at Lambert's Point.

Richmond—Flour and Corn Mills, etc.—There is talk of the erection of steam flour and corn mills and a cannery.

Richmond—Chemical Works.—The S. G. Webb Chemical Co. will repair at once its plant, which was damaged to the extent of \$6000 last week by fire. New equipment will be installed and in operation within sixty days.

Richmond—Pump Works.—The John H. McGowan Co., of Cincinnati, Ohio, will enlarge its manufacturing plant at Richmond; building has been leased, and an equipment for the manufacture of pumps will be installed at once.

#### WEST VIRGINIA.

Charleston—Ice Plant.—The Consumers' Ice & Cold Storage Co. will be organized and erect an ice plant.

Davis—Tannery.—The United States Leather Co. is building an addition 40x150 feet to its tannery.

Fayette County—Coal and Timber Lands, Lumber Plant, etc.—Abram S. Hewitt (office 17 Burling Slip, New York city,) and associates have purchased the Loup Creek estate in Fayette county, consisting of 25,000 acres of land. A five-mile railway has been contracted for to open up a market for the timber on the property and ultimately to develop the coal deposits. A saw mill will be erected and put in operation next summer.

Mannington—Glass Factory.—The Commercial Club is endeavoring to secure a bonus of \$30,000 to induce the erection of a glass factory by the Fox Glass Co., of Fostoria, Ohio.

Parkersburg—Oil Wells.—Leases on the Ingraham and Ogdin oil lands, on which twenty-eight wells are now producing 375 barrels daily, have been sold to the United States Pipe Line Co. for \$187,500.

Point Pleasant—Water Works.—The city

is prepared to grant franchise for constructing water works; John E. Beller, mayor.

Webster—Resort Company.—The Webster Springs Co. has been incorporated, with capital stock of \$30,000, to develop a health resort. Incorporators are J. N. Camden, Myer Newberger, H. H. Moss, Joe Keller and George Newberger, of Parkersburg, and George W. Whitescarver, of Grafton.

Wheeling—Condiment Factory.—J. W. Hunter and others have incorporated the J. C. Hunter Co., with a capital stock of \$50,000; purpose, to manufacture mustards, preserves, etc.

Wheeling—Mercantile.—Incorporated: The Miller Drug Co., with a capital stock of \$2500.

#### BURNED.

Carrollton, Ky.—The steam laundry of Powers & Pulliam.

Denison, Texas—Blacksmith shops of the Missouri, Kansas & Texas Railroad; loss \$6000; C. T. McElvany, master mechanic.

Dublin, Ga.—Cotton gin of E. M. Lake.

Finchville, Va.—The Finchville Canning Co.'s plant; loss \$3000.

Frostburg, Md.—The Union Mining Co.'s blacksmith shop and engine-house.

Lookout Mountain, Tenn.—The electric plant of the Lookout Mountain & Lulu Lake Incline Railway Co.; loss \$25,000.

Vicksburg, Miss.—Cotton gin of S. B. Duncan.

Winston, N. C.—The Brown Bros. Tobacco Co.'s factory; loss \$150,000.

#### BUILDING NOTES.

Assitchie (not a postoffice), S. C.—Hotel. D. Z. Renny, of Michigan, and J. T. Dix, of Wilcox county, have purchased site for a hotel to be built. J. R. Menrae, of Abbeville, S. C., can possibly give information.

Baltimore, Md.—Dwellings.—R. Stump has permit to build twenty-three two-story brick dwellings; Joseph H. Pentz to build ten three-story brick dwellings; Max Pitt to build six two-story brick dwellings; Geo. C. Goldman to build eleven two-story brick dwellings.

Brunswick, Ga.—Courthouse.—Glynn county will probably build a new courthouse. Address the county clerk.

Laurens, S. C.—Store.—Charles C. Hook, of Charlotte, N. C., is preparing plans for a store building for the Laurens Cotton Mills; structure to be three stories high, 58x130 feet.

New Orleans, La.—Warehouses.—The Illinois Central Railroad Co. is now arranging for plans and specifications for new warehouses to be built at Stuyvesant docks; J. T. Harahan, vice-president, Chicago, Ill.

New Orleans, La.—Dwellings.—Permit issued to Mrs. A. Communy for \$2700 frame dwelling, and to Julius Manger for \$2500 dwelling.

New Orleans, La.—Office Buildings.—The Great Southern Telephone & Telegraph Co. has obtained permit for the construction of the office building recently reported; to cost \$25,000. E. Irwin has permit to erect building to cost \$20,000.

New Orleans, La.—Dwellings.—J. J. Dietz has permit to build \$2700 frame dwelling; J. J. Weiss, \$3000 dwelling.

Norfolk, Va.—Bank Building.—The Citizens' Bank will construct a nine-story building of brick and terra cotta, with steel interior architectural work, three elevators, steam heat, electric light, treasure vault, bank fixtures, etc. An electric-light plant and a steam engine will be required; no contracts let; estimated cost fully \$100,000; architect, Charles E. Cassell, 401 Law Building, Baltimore, Md.

Paulding, Miss.—Jail.—Contract will be awarded in February for the construction of a jail and furnishing same; plans now being prepared. For further information address T. Q. Brame, clerk.

Portsmouth, Va.—Castle.—The Knights of Pythias will build a \$5000 castle.

Richmond, Va.—Warehouses.—The S. G. Webb Chemical Co. is building two new warehouses.

San Antonio, Texas—Hotel.—Chicago capitalists have about decided to build a \$300,000 hotel in San Antonio. Jules de Horvath, of Chicago, has completed preliminary plans for the proposed structure, which show a building of steel construction, eight stories high, 100x126 feet, 200 rooms for guests, passenger and freight elevators, sanitary plumbing, electric fixtures, etc. The San Antonio Business Men's Club can probably give further information.

Sapphire, N. C.—Hotel.—Pennsylvania

capitalists have purchased recently 25,000 acres of land in Jackson county; will build a hotel and improve the land. J. F. Hays, representative of interested parties, can be addressed.

Shreveport, La.—Union Depot.—The Kansas City, Shreveport & Gulf Railway (H. J. Simons, superintendent of construction,) is about to commence work on its plant.

Summerville, S. C.—Church.—A new church building will be erected. Address P. H. Langdon, chairman, for information.

Tullahoma, N. C.—Hotel.—John B. Carroll will either rebuild his burned hotel or erect a business block on the site.

Versailles, Ky.—Dwelling.—Horatio Bright, of Louisville, will build a dwelling at Versailles.

Washington, D. C.—Depot.—The Pennsylvania Railroad Co. (William H. Brown, chief engineer, Philadelphia, Pa.) will build a depot in Washington.

Washington, D. C.—Temple.—Louis F. Stutz and Frank W. Pease's plans for the proposed Hebrew Temple have been accepted. The architects have been authorized to make working drawings, etc., at once.

Washington, D. C.—Warehouses.—C. A. Didden has prepared plans for two storage warehouses to be built by Peter Fersinger; to cost \$8000.

Washington, D. C.—Dwellings.—George P. Newton has permit to erect six dwellings at a cost of \$12,000.

Williamson, W. Va.—Courthouse.—Bids will be opened December 21 for the construction of courthouse after plans and specifications prepared by Frank P. Milburn, of Winston, N. C.; will cost not over \$40,000; Leo F. Drake, clerk. (See advertisement in Manufacturers' Record.)

#### RAILROAD CONSTRUCTION.

##### Railways.

Chattanooga, Tenn.—John A. Hood confirms the statement that he and others will build a line from Chattanooga to Chickamauga Park. It is expected to begin operations in January. W. H. English is among those interested. His address is 80 Euclid avenue, Cleveland, Ohio.

Dallas, Texas.—The Gulf, Colorado & Santa Fe has let a contract to ballast its line in Texas, covering a distance of 900 miles in all. Z. J. Simmons, of Kenosha, Wis., is reported as securing the contract at a bid of \$1,000,000. L. J. Polk, at Galveston, is general manager.

Falls Church, Va.—The Washington, Arlington & Falls Church Railway Co. has received several propositions to extend its electric line, which is completed from Washington to Falls Church, by way of Fort Meyer and Arlington Cemetery. It is about nine miles in length. Charles O. Hinckman, of Philadelphia, is president, and R. H. Phillips, of Washington, general manager.

Fayetteville, Ark.—Prest. John A. Griffin, of the Fayetteville Electric Railway Co., advises the Manufacturers' Record that it is to begin on this line in January. It is to be thirty miles in length. No contracts have been let as yet.\*

Fayetteville, Tenn.—It is reported that the Louisville & Nashville Company has secured control of the Tennessee & Alabama road, completed from Fayetteville to Madison Cross Roads, and will complete it to Decatur, Ala. Milton H. Smith, at Louisville, is president of the L. & N.

Galveston, Texas.—The Gulf & Interstate Company built ten miles of line during the past year, and informs the Manufacturers' Record that it expects to construct 150 miles during 1897. L. E. Beadle, at Beaumont, Texas, is chief engineer.\*

Hot Springs, Ark.—It is reported that the Kansas City, Pittsburg & Gulf Company has begun surveys for the proposed branch from its system to Hot Springs, sixty-five miles, which has been considered for some time past. The branch, if constructed, will be built from Mena, on the K. C., P. & G. A. E. Stilwell, at Kansas City, is president of the company.

Hubert, Ga.—It is understood that a new company is to be formed to purchase the Cuyler & Woodburn road and extend it to Savannah, also to Statesboro. The road at present is thirteen miles long, and the extension would be forty miles, making the line fifty-three miles in all. Hon. Pope Barrow, of Savannah, Ga.; E. M. Kilby, of Atlanta, and the Anniston (Ala.) National Bank are interested and have applied for a charter in Georgia.

Kansas City, Mo.—Contracts have been let for the line between Trenton and Parsonsburg, Mo., which will connect the

Quincy, Omaha & Kansas City and the Omaha & St. Louis roads. It will form part of the group of roads controlled by the Kansas City, Pittsburg & Gulf, and is to be thirty-four miles in length. Robert Gillham, chief engineer, may be addressed.

Leesburg, Fla.—The St. John's & Lake Eustis road is to be changed from narrow to standard gage by the Plant Railway & Steamship Co., which controls it. The line is forty-eight miles long. B. Dunham, at Savannah, Ga., is superintendent.

New Orleans, La.—Vice-President Charles B. Van Nostrand, of the New Orleans & Western, informs the Manufacturers' Record that further extensions of this line will be made in the spring. His office is 36 Wall street, New York.

Norfolk, Va.—It is stated that plans have been completed for the proposed belt railroad, and that the New York, Philadelphia & Norfolk will construct it between Portsmouth, Berkley and Norfolk. A. J. Cassett, 28 South Fifteenth street, Philadelphia, is president of the company.

Timpson, Texas.—The Marshall, Timpson & Sabine Pass Company, it is stated, will build about twelve miles of extension during the next year. Ten miles of the road were completed in 1896. T. S. Garrison, at Timpson, may be addressed.

Washington, D. C.—Chief Engineer Wm. H. Brown, of the Pennsylvania Company, confirms the report in the Manufacturers' Record that plans have been prepared for a new station and terminal system in Washington, to be constructed if authority is received from Congress. Mr. Brown's office is at Philadelphia.

#### Street Railways.

Baltimore, Md.—It is reported that the Central Railway Co. has secured the franchise to build an electric road on the Belair turnpike and may construct five miles of line at once. George Blakiston, corner of South and Lombard streets, is president of the company.

Charleston, S. C.—The work of laying rails on the Charleston Street Railway has begun. It is expected to have cars running on a part of the line by January 1. J. S. Lawrence is managing director of the company.

Washington, D. C.—The Metropolitan Railway Co. has decided to extend its electric line in the suburbs. S. L. Phillips may be addressed.

#### Machinery, Proposals and Supplies Wanted.

**Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.**

**Boiler.**—The National Rice Milling Co., New Orleans, La., wants to buy a forty to fifty horse-power quick steaming boiler for fire pump.

**Boiler and Engine.**—Wanted, a second-hand semi-portable engine and boiler of thirty-five to forty horse-power. Address Lock Box No. 1029, Gallon, Ohio.

**Boiler and Engine.**—E. M. Wheeler, Mobile, Ala., wants second-hand forty to fifty horse-power engine and boiler and shafting.

**Boiler and Engine.**—Wanted, a second-hand forty horse-power engine and sixty to eighty horse-power boiler, in good order and cheap; full particulars, price, etc., wanted. Address Z 206, Sun Office, Baltimore, Md.

**Bridge.**—Richard Eames, Jr., New London, N. C., wants to correspond with bridge builders regarding letting contract.

**Bridge.**—Sealed proposals will be received until January 5 for the construction of a wooden bridge across the Tallapoosa river, Georgia; structure to be 106 feet long, safe landing at each end, not over one foot in twenty grade, etc. Address S. J. Brown, ordinary, Villa Rica, Ga.

**Cotton-mill Machinery.**—The Mallison Braided Cord Co., Athens, Ga., wants to buy looms for making back band webbing.

**Engine.**—Wanted, a good second-hand engine, seventy-five to 100 horse-power. Address R 270, Sun Office, Baltimore, Md.

**Flour Mill.**—Holder, Brown & Co., Gallatin, Tenn., are investigating the cost of a 50-barrel flour mill.

**Flour Mills.**—E. B. Williams, 201 Hennen Building, New Orleans, La., wants complete information regarding flour and general cereal mills, including estimates on erection of 250 to 500-barrel plant.

**Furniture Machinery.**—Chas. H. Denny, Reldsville, N. C., wants machinery for manufacturing children's beds, cribs and cradles.

**Grinding Mills.**—The Cohutta Talc Co., Spring Place, Ga., wants to buy a good second-hand mill to grind wet tripoll into a fine paste.

**Ice Machine.**—Wanted, estimates on ice machine for a cold-storage room twenty feet square; second-hand will do. Address P. O. Box 154, Middleborough, Ky.

**Ice Machine.**—The Albany Artesian Ice Co., Birmingham, Ala., will want to buy 10-ton compression ice machine.

**Ice Plant.**—J. A. Duke, Chapel Hill, N. C., wants prices on ice plant.

**Mining Machinery.**—The Nardle-Tynes Foundry & Machine Co., Birmingham, Ala., wants to correspond with makers of gold-mining machinery.

**Pipe Machinery.**—See "Terra-cotta Machinery."

**Railway Equipment.**—The Fayetteville Electric Railroad Co., Fayetteville, Ark., John A. Griffin, president, will be ready in 1897 to contract for rolling stock.

**Railway Equipment.**—The Marshall, Timpson & Sabine Pass Railway, Timpson, Texas, will need additional rolling stock, rails, etc. Address T. S. Garrison, of the company.

**Railway Equipment.**—The Gulf & Interstate Railway Co., Galveston, Texas, L. E. Beadle, chief engineer, will need engines, box cars and flat cars.

**Saw Mill.**—J. T. Hammond & Co., Joslyn, Ga., wants to buy a saw mill, new or second-hand.

**Shafting.**—E. M. Wheeler, Mobile, Ala., will probably want shafting.

**Soda-water Apparatus.**—J. V. Prater, Birmingham, Texas, will want soda-water apparatus, two cylinders of twenty-five gallons capacity, generator, pump, bottles, etc.

**Telephone Equipment.**—John Carraway, Biloxi, Miss., wants to correspond with makers of telephone equipments.

**Terra-cotta Machinery.**—The Salem Iron Works, Salem, N. C., wants to correspond with makers of terra-cotta and sewer-pipe machinery.

**Vehicles.**—Robert F. Otts, Greensboro, Ala., wants to buy dumping coal wagons and ice delivery wagons.

**Water-power Plant.**—The Fayetteville Electric Railroad Co., John A. Griffin, president, Fayetteville, Ark., will be ready to contract early in 1897 for the construction of a water-power plant.

**Water Works.**—The city of Athens, Ala., Thomas C. McClellan, mayor, is seeking information regarding water works.

**Water Works.**—Charles R. Ross, Madisonville, Ky., is in the market for information on water works and estimates on cost of standpipe, eight, six and four-inch pipe (iron), and apparatus for supplying private consumers, for town of 4000 inhabitants; to force water by compressed air.

**Water Works.**—Bids will be received until January 4 for the construction of water works at Abbeville, S. C. Specifications will be furnished to responsible bidders at Abbeville or at New York office of Pownall & Minshall, engineers, 150 Nassau street. The work comprises the furnishing of 551 tons of cast-iron pipe, eight-inch, six-inch, four-inch diameter; the laying of 8654 feet of eight-inch pipes, 11,703 feet six-inch pipes, 14,805 feet four-inch pipes, fifty valves, forty-nine valve boxes, fifty-four double-nozzle fire hydrants, steel standpipe 16x100 feet, pumps, boilers, frame pumping station, etc. John Pownall, of the above firm, is now at Abbeville.

**Water-works Supplies.**—Kline O. Varn, Fort Meade, Fla., wants sample and prices of spraying nozzle or sprinkler to throw water seventy-five or eighty feet with pressure of forty to seventy pounds, placed on a sprinkler seven feet high.

**Woodworking Machinery.**—See "Furniture Machinery."

**Messrs. W. A. Crook & Bros. Co.**, of Newark, N. J., have in press their 1897 catalogue. It will consist of 130 pages, liberally illustrated, and showing all the latest improvements in hoisting engines adapted for every purpose. The catalogue will cover the entire field in this class of machinery. Applications for the new work will be received now

by the W. A. Crook & Bros. Co., and copies sent out as soon as possible after publication.

#### TRADE NOTES.

Wells & Walker, Downington, Pa., recently placed their order with Sprout, Waldron & Co., Muncey, Pa., for a twenty-five horse-power engine and boiler and a complete cornmeal and feed outfit.

An order lately received by the Campbell & Zell Boiler Co., Baltimore, for its Zell improved boiler is from the Metropolitan Railroad Co., Washington. It is the fourth order received from this company.

The plant of the Lorain Foundry Co., at Lorain, Ohio, will begin operations January 1, 1897. This concern makes a specialty of sand and chilled rolls, ingot molds and heavy castings up to 75,000 pounds in weight. It considers the outlook for 1897 is excellent.

The Pettee Machine Works, Newton Upper Falls, Mass., has received the order for revolving flat cards for the Ashby Cotton Mills, of Marion, S. C. The Lexington Manufacturing Co., of Lexington, S. C., has placed a repeat order with the same concern for revolving flat cards.

Edward J. Etting, a well-known iron broker and commission merchant in Philadelphia, has changed his location. He has occupied quarters in the Fidelity Life Building, on Broad street. Mr. Etting handles iron and steel of every description, as well as railroad and street railway equipment and supplies.

Mr. J. C. Weaver, of Dallas, Texas, who has had a large experience with ice-making and refrigerating machinery, has become the representative in Texas of the Remington Machine Co., Wilmington, Del. This arrangement will facilitate answers of queries and applications for information regarding the high-grade machinery built by this company.

The use of raw-hide papers for roofing and siding purposes is daily increasing and is not limited to this country. During the past month a large shipment was made to Nicaragua, Central America, to be used for roofing boat cabins and decks. The paper is specially adapted for this purpose and gives good satisfaction. C. S. Garrett & Son, 12 and 14 Decatur street, Philadelphia, Pa., are the manufacturers.

A balanced tipple for earthwork and mine cars has been recently perfected by B. S. Randolph, of Frostburg, Md. Several of them are in operation near Frostburg and show remarkable results. One of them has dumped forty-five mine cars in eight minutes, being at the rate of 10,000 tons of coal per day of ten hours. Mr. Randolph, not having facilities for manufacturing this contrivance, intends disposing of the entire patent rights. He has issued a circular which describes in detail the invention.

Mr. Kennedy Park, for ten years in the erecting department of the Babcock & Wilcox Co., of New York, and for the past five years superintendent of the New England erecting department for that company, has severed his connection with that company and gone with the Aultman & Taylor Machinery Co. to take charge of the erecting department for Cahall vertical and Cahall-Babcock & Wilcox boilers in New England. Mr. Park's connection in the New England district for some years past has made for him many strong friends, who will be glad to know of his new position.

We learn that at the Wainwright Brewery, St. Louis, Mo., the entire system of pumping is to be changed, after extensive tests made during the past summer as to the most efficient and economical method for especial needs. It has been decided to use the air lift and direct air pressure systems. The air compressor for the low-pressure service, consisting of Halsey pneumatic pumps, will be a Rand cross-compound condensing engine with duplex air cylinders, built by the Rand Drill Co., and is of the latest improved type. A second compressor, built by the same company, and of special construction, fitted with hooded heads, will take air at initial pressure of about fifty pounds from the main air receiver and compress up to 125 pounds for the air lift system. The Pneumatic Engineering Co., 100 Broadway, New York, has the contract for the entire plant.

During the month of November the American Engine Co., Bound Brook, N. J., builder of dynamo-electric machinery, made the following shipments: 18-kilowatt dynamo, Syracuse Post, Syracuse, N. Y.; 50-kilowatt dynamo, Evening Star, Washington, D. C.; twenty-five horse-power motor, Springfield Union, Springfield, Mass.; twelve horse-power motor, New York Tribune, New York city; twelve horse-power motor, Peoria Herald, Peoria, Ill.; twelve horse-power motor, Duluth News-Tribune, Duluth, Minn.; 18x8 engine, Leavenworth Times, Leavenworth, Kans.; five horse-power motor, St. Paul Pioneer Press, St. Paul, Minn.; 10x10 engine and fifty horse-power boiler, Chinese government; 25-kilowatt dynamo, the Morning News, Savannah, Ga.; five horse-power motor, Salem Daily Gazette, Salem, Mass.; twelve horse-power motor, Chicago Journal, Chicago, Ill.; fifty horse-power motor, Boston Daily Post, Boston, Mass.; 75-kilowatt dynamo, Kansas City Star, Kansas City, Mo.; twelve horse-power motor, W. D. Boyce & Co., Chicago, Ill.; 14x12 engine, J. Harper Bonnell Co., Long Island City, L. I.

The recent decision of Judge Sage, of Cincinnati, declaring the "Dodge independent wood split pulley patent" to be valid, seems to have created a doubt in the minds of some users of wood pulleys as to the relations to this patent decision of the Reading Wood Pulley Co., Reading, Pa. We are informed by this company that it is in no way affected by that decision. It guarantees to protect all users of the "Reading pulley" from all litigation arising from use of the same. The company says: "We do not secure our pulleys to the shaft by means of clamp bolts, clamping the separated spoke bars, hubs or intermediate bushings to the shaft. These are the elements of the patent affected by the decision. The Reading pulley is built with a removable section in rim and hub, or is an open side pulley, and this style of pulley is broadly covered by patents owned exclusively by the Reading Company. It invariably uses a set screw, and in large or important pulleys often adds a key way. No bush system is employed, and all of those pulleys are turned up and balanced on their own hubs. The merits of the Reading pulley are proclaimed by all users, not only by complimentary letters, but by additional business, and that in the face of cheaper competition."

The United States Sprinkler Bulletin, published by the General Fire Extinguisher Co., Providence, R. I., and devoted to exploiting the sprinkler system of that company, has a number of instructive articles. We excerpt the following: "Mr. George D. Markham, a well-known local agent of St. Louis, was present at the last annual meeting of the Fire Underwriters' Association of the Northwest, at Chicago, and read a paper, in which he said: 'There are today 126 sprinkler equipments in St. Louis. There have been thirty-nine fires under sprinklers in that city during the last seven years, for which the total loss to the insurance companies is \$17,241.91. Out of this total, \$15,245.28 represents a fire in a cotton compress, which, but for the sprinklers, would have cost the companies \$823,000, and was the only serious fire in a cotton compress that was ever extinguished.' Mr. Markham refers to the great St. Louis cotton compress, which is by far the largest in the world. The Grinnell sprinklers are installed throughout, and the extent of the system may be inferred from the fact that more than thirty Grinnell air valves were required in the equipment. This fire has often been referred to as one of the most brilliant successes of the Grinnell dry-pipe system. The fire occurred January 15, 1892."

The people of Norfolk are considering the idea of burying the telegraph, telephone and other wires underground. During the recent storm the ice-coated wires were broken in many places and caused considerable damage. The city council has appointed a committee to prepare the best plan.

The use of the metric system of weights and measures in this country is becoming more and more extensive. Lynn H. Shanks, of 32 Park Place, New York, has recently compiled a table showing the weight of pounds in kilograms and the process of reduction. It is worth study by mathematicians.

If you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send us a postal card giving the character of the machinery needed.

## FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

No advertisements but those of a financial character will be accepted for this page.

## New Bank Building at Norfolk.

The Citizens' Bank, of Norfolk, Va., is having plans prepared for a building, which will be one of the finest in the South. It is to be a combined banking and office structure, nine stories high and 56x134 feet in dimensions. The materials of the exterior will be principally ornamental brick and terra-cotta, while the interior columns, girders and architectural work will be steel. The upper stories will be floored with Carolina pine, and the finish will be of a character to correspond with the rest of the building. It is to be heated by exhaust steam and lighted by electricity, the power and light being generated by an independent steam plant and dynamo to be placed in the basement. Three elevators will comprise part of the equipment. These will probably be operated by hydraulic power. The lower floor will be reserved entirely for the bank proper, and will be constructed with the necessary vaults, electric alarm appliances, etc. The cost of the building has not been as yet fully estimated, but it is calculated to be fully \$100,000.

The Citizens' Bank has a capital of \$300,000 and a surplus of over \$100,000. W. H. Peters is its president, and W. H. Doyle, cashier. The architect for the proposed building is Charles E. Cassell, of 401 Law Building, Baltimore. The plans have not as yet been completed, and no contracts have been let.

## New Corporations.

The Mutual Investment Fire Insurance Co. has been formed at Washington by Robert Reyburn, W. L. Sears and others.

The Home Building and Investment Association has been chartered at Memphis, Tenn., by H. L. Armstrong and others.

The People's Savings Bank has been formed at Danville, Va., with W. P. Hodnett as president; C. C. Dula, vice-president, and W. F. Patton, cashier.

The capital of the newly-formed Savannah Building and Loan Association is to be \$50,000. The incorporators include John W. Smith and B. P. Lockwood.

The new bank to be opened at Lewisburg, W. Va., is to be called the Bank of Greenbrier. It will have \$25,000 capital. D. A. and John G. Dwyer are among the directors.

H. Read Simons, R. Maxwell Anderson, George B. Edwards and others have formed the Security Real Estate & Investment Co. at Charleston, S. C., with a capital of \$100,000.

The Virginia Investment Co. has been organized at Norfolk, with the following officers: John T. Griffin, of Portsmouth, vice-president; James T. Borum, of Portsmouth, secretary and treasurer.

## New Securities.

The city of Orange, Texas, will sell \$14,000 in bonds for school purposes. Mayor B. C. Miller may be addressed.

The town of Union, S. C., it is reported, will sell \$40,000 in bonds for improvements. The town clerk may be addressed.

The bonds to be sold by Okolona, Miss., amount to \$30,000, and bear interest at the rate of 6 per cent. Bids will be received until December 31 by E. J. Ezell, at Okolona.

The issue of \$650,000 in receivers' cer-

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ificates of the Baltimore & Ohio, it is stated, has attracted the attention of English investors, who have bought over \$500,000 worth. The sale was made by the Baltimore Trust & Guarantee Co., which purchased the entire issue.

The value of the bonds of Rockville, Montgomery county, Maryland, was shown in a recent sale of \$20,000 worth. The Montgomery County National Bank, Hambleton & Co., of Baltimore, and Thos. S. Grimke, of New York, were the bidders, and made offers ranging from 97.55 to 101%, the latter coming from the New York party, to whom the sale was made. The bonds bear only 4 per cent. interest.

## Dividends and Interest.

The Builders' Exchange Co., of Baltimore, has declared a dividend of 2 per cent.

The Americus (Ga.) Guano Co. has declared a dividend of 10 per cent. out of the year's business.

J. WM. MIDDENDORF.

Members Baltimore Stock Exchange.

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Dealers in RICHMOND, VA.

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JOHN K. COWEN, Counsel.

Gives security for Executors, Administrators, Trustees, Receivers, officers of Banks, Corporations, Lodges and Societies, Contractors, Clerks, Messengers, Conductors, Motormen, and all other employees, etc.

## GUARANTEES THE FULFILMENT OF CONTRACTS.

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## BALTIMORE.

CAPITAL, - \$1,000,000.

## A LEGAL DEPOSITORY FOR COURT AND TRUST FUNDS.

Acts as Financial Agent for States, Cities, Towns, Railroads and other Corporations. Transacts a general trust business. Lends money on approved security. Allows interest on special deposits. Acts as Trustee under Mortgages, Assignments and Deeds of Trust; as Agent for the Transfer or Registration of Stocks and Bonds, and for the payment of coupons, interest and dividends.

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LLOYD L. JACKSON, FIRST VICE-PRES.  
HENRY J. BOWDOIN, SECOND VICE-PRES.

J. BERNARD SCOTT, Secretary and Treasurer.

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Fred. M. Colston, Andrew D. Jones.  
H. J. Bowdoin, James Bond.  
Joshua Levering, Alexander Brown.  
Frank Brown, T. K. Worthington.  
W. B. Brooks, Jr., Clayton C. Hall.  
W. H. Baldwin, J. D. Baker.  
Fred. W. Wood, F. S. Bangs.  
F. M. Thieriot, John R. Garrett.

The Oglethorpe Savings &amp; Trust Co., of Savannah, Ga., has declared a dividend of 3 per cent., semi-annual.

The Bank of Donaldsonville, La., in addition to declaring a dividend of 4 per cent., has added \$2000 to its surplus fund, which is now \$20,000.

## Financial Notes.

The Savannah Clearing-House Association has elected the following officers: President, S. P. Hamilton; vice-president, M. B. Lane; secretary and treasurer, John M. Hogan.

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STOCKHOLDERS' LIABILITY \$500,000.00TOTAL RESOURCES \$1,000,000.00  
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JOHN R. BLAND, Vice Pres. and Gen Manager. JOHN R. BLAND, Vice Pres. and Gen Manager. ALEXANDER PAYSON KNAPP, Secretary. TOWNSEND SCOTT, Treasurer.

HON. IDOR RAYNER General Counsel. MARTIN LEHMAYER, Assistant Counsel. WILLIAM B. RAYNER, Assistant Counsel.

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INTEREST IN  
A GOLD MINE?

Suppose you write for particulars about

## THE BIG UNION MINING CO

This company owns and is now opening up rich gold mines in the famous Leadville Gold Belt of Colorado. The officers and stockholders of the company are not speculators but are well-known conservative business men. Here are some of them:

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STEPHEN H. EMMENS, Vice-President.

L. L. POWELL, Secretary.

H. B. TILDEN, Treasurer.

ARCHIBALD H. TAYLOR, Gen'l Counsel.

## DIRECTORS.

B. L. Duke, the great tobacco manufacturer Durham, N. C.

W. T. O'BRIEN of the American Tobacco Co., Durham, N. C.

Steph. H. Emmens, Pres. of the Mining and Industrial Exchange, New York City.

R. E. Lyon, of Baltimore, Md.

Geo. C. S. Huermann, of Baltimore, Md.

L. D. Heartt, Cashier First Nat'l Bk Durham, N. C.

H. B. Tilden, of Baltimore, Md.

The stock of this company has been listed on the New York Mining and Industrial Exchange.

The office of the company is at 849 Equitable Building, Baltimore, Md.

The treasury stock now being offered affords an investment opportunity that is well worth looking into.

The Big Union Mines, the property of this company, lie on the same contact vein with the most noted of the great Leadville mines. One of these the "Little Johnny" is the greatest gold mine in Colorado and perhaps in the world. Its present output is about \$300,000 per month. It paid last year \$1,000,000 in dividends and is now paying monthly dividends of \$100,000 to \$200,000.

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Brooks, T. H., & Co. .... 29	Eisenbrandt Cycle Co. .... 39	Electrical Supply & Telephone Co. .... 39	Viaduct Mfg. Co. .... 29	Viaduct Mfg. Co. .... 29
Broomell, Schmidt & Co. .... 18	Empire Glass & Decoration Co. .... 19	Emerson Co. .... 25	Vulcan Works. .... 30	Vulcan Works. .... 30
Brotherhood, F., Receiver. .... 21	Empire Paint & Roofing Co. .... 28	Empire Paint & Roofing Co. .... 28		
Brown, A. & F. .... 32	Enterprise Boiler Co. .... 14	Enterprise Machine Works. .... 21		
Brown Hoisting & Con. Mch. Co. .... 2	Enterprise Boiler Co. .... 14	Enterprise Machine Works. .... 21		
Buckeye Iron and Brass Works. .... 32	Enterprise Machine Works. .... 21	Etting, Edward J. .... 21		
Buffalo Forge Co. .... 40	Exchange Banking & Trust Co. .... 20	Exchange Banking & Trust Co. .... 20		
Bureau of Freight and Transportation, Charleston, S. C. .... 18	<b>F</b>	F. A. G. .... 19		
Burnham Bros. .... 35	Falls Rivet & Machine Co. .... 32	Fay, J. A., & Egan Co. .... 24		
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Bushnell, G. H., Press Co. .... 32	Farnsworth Oil & Creosote Works. .... 22	Ferdinandine Oil & Creosote Works. .... 22		
Byers, Jno. F., Machine Co. .... 4	Field Tool Co. .... 12, 21	Farrell, J. P., Machine Co. .... 16		
<b>C</b>	Fitz-Hugh & Spencer. .... 22	Farrell, J. P., Machine Co. .... 16		
Cahall Sales Department. .... 18	Fleming Mfg. Co. .... 29	Farrell, J. P., Machine Co. .... 16		
Caldwell, H. W., & Son Co. .... 4	Foos Gas Engine Co. .... 17	Farrell, J. P., Machine Co. .... 16		
Cameron, A. S., Steam Pump Wks. .... 34	Foos Mfg. Co. .... 26	Farrell, J. P., Machine Co. .... 16		
Cameron & Barkley Co. .... 26	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Campbell & Zell Co. .... 15	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Canton Steel Roofing Co. .... 28	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Capital Traction Co. .... 19	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Card Electric Co. .... 38	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Cardwell Machine Co. .... 32	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Carlins, Thos., Sons. .... 21	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Carnell, George. .... 33	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Caroline Iron Works. .... 27	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Carpenter, E. M. .... 21	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Carver Cotton Gin Co. .... 30	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
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Castner & Curran. .... 34	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
C. & B. Line. .... 36	Farrell, J. P., Machine Co. .... 16	Farrell, J. P., Machine Co. .... 16		
Channon Co., H. .... 27	Farrell, J. P., Machine Co. .... 16	Farrell, J.		



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### PROPOSALS.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., December 4, 1896.—Sealed proposals will be received at this office until 2 o'clock P. M. on the 5th day of January, 1897, and opened immediately thereafter, for all the labor and materials required for the interior finish of basement, first story, etc. of the U. S. Courthouse, Custom-house and Post-office at Omaha, Neb., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Omaha, Neb. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. WM. MARTIN AIKEN, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., December 8, 1896.—Sealed proposals will be received at this office until 2 o'clock P. M. on the 6th day of January, 1897, and opened immediately thereafter, for all the labor and materials required for the erection and completion (except heating apparatus) of the U. S. Postoffice building at Lynn, Mass., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Lynn, Mass. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. WM. MARTIN AIKEN, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., December 14, 1896.—Sealed proposals will be received at this office until 2 o'clock P. M. on the 7th day of January, 1897, and opened immediately thereafter, for all the labor and materials required for the erection and completing (except heating apparatus) of the U. S. Postoffice building at Topeka, Kan., in accordance with the drawing and specification, copies of which may be had at this office or the office of the Custodian at Topeka, Kan. Each bid must be accompanied by a certified check for a sum not less than a per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. WM. MARTIN AIKEN, Supervising Architect.

NOTICE TO CONTRACTORS. Williamson, W. Va., December 10, 1896. The County Commissioners of Mingo County, W. Va., invite sealed proposals for the erection of a new Courthouse, agreeable to plans and specifications prepared by Architect Frank P. Milburn, of Winston, N. C. Same are now on file with the County Clerk. Bids will be received until 2 o'clock P. M. December 21, 1896. All bids to be accompanied with certified check for \$1000, as evidence of good faith on part of the contractor, check made payable to J. K. Anderson, President of the board. The court reserves the right to reject any one or all bids. Proposed cost \$40,000. LEO F. DRAKE, Clerk.

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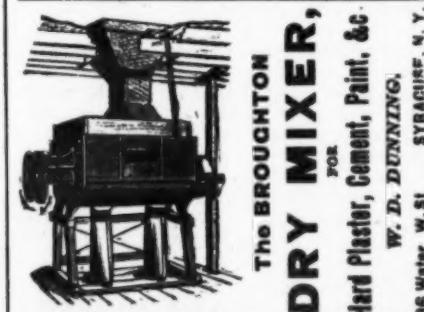
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Will secure interest and management of the oldest and best established Hotel business in Asheville, N. C. Owner retiring. For particulars address H. L., lock box 685, Asheville, N. C.

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An active, energetic partner wanted in an established MANUFACTURING BUSINESS. The plant is well located in the South, as to railway facilities, raw material, etc., and now commands a trade for its whole product. The above amount will purchase a half interest and furnish the extra working capital required. Address PARTNER, Manufacturers' Record.

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70 H. P. Engine and Boiler; 2 Burr Mills; Denmead; Crusher; Mixer; Bagger and Batcher; Acid Tank; Air Pumps; Screens; Belting and Shafting, &c. First class order. Water and Rail.

Good Trade and Brands.  
Will sell machinery separate.  
Prices moderate and terms easy.

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WANTED.—A competent manager for Shirt Factory, to be established for the manufacture of cheap colored shirts for the jobbing trade. Must be man thoroughly practical in all of the departments of manufacture, and able to invest \$5,000 in stock of company. A first-class opportunity is here presented to join in the establishment of a substantial enterprise in a prosperous Southern city of 25,000 people. Address SHIRTS, Box 153, Lynchburg, Va.

COAL 91 acres on railroad and waters of the Monongahela River, 6 miles from Clarksburg, W. Va. Pittsburgh vein 9 feet thick. Unexcelled for fuel, coke or gas. Owner is growing old and in feeble health, and will sell VERY LOW.

TIMBER Several tracts ranging from 300 to 55,000 acres of virgin forests of Hemlock, Spruce, White Pine, Poplar, Oak, Cherry, etc., at reasonable prices. Titles perfect. Guaranteed to come up to representations. Estimates and full particulars on application.

OIL Territory in Oil-producing belt of West Virginia for sale and for development.

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I have for sale a magnificent manufacturing plant, especially adapted for stove or other foundry purposes, with complete line stove, holloware, and grate patterns, flasks and machinery, but very desirable for a furniture or other wood-working institution.

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There are two and one half acres real estate just outside city limits, on electric car line (city water) with 320 feet frontage on Illinois Central Railroad side track.

It is in heart of manufacturing center, and Memphis is the cheapest lumber market in the South. Memphis railroad and river shipping facilities are not equalled in the South. Will sell as a whole or less the stove outfit.

This is a rare opportunity to purchase a GOOD STRONG PLANT at a low price, and on easy terms.

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MANUFACTURERS' attention is called to the large six-story Central Power Station of the Capital Traction Company, covering an entire block in the very centre of the business section of the nation's capital city. Suitable space for light manufacturing plants and other business, with power, heat and electric light, can be obtained at moderate rates. Address CAPITAL TRACTION COMPANY, Washington, D. C.

**Notice! Notice! Notice!**  
FOR SALE.—One SAW MILL and Fixtures, including one American Dry Kiln, consisting of outfit as follows: Two 60 horse-power Boilers, one 50 horse-power Boiler, one 50 horse-power Tanner and Delaney Engine, one 50 horse-power Engine, Nagle make, one 7-inch Gun-Shot Feed, one Stearn Carriage and Head Blocks, one Sawdust Elevator complete, one set of heavy iron Live Rollers, one Lane Double Edger, one Trimmer, one Automatic Filing Machine, one Cut-off Saw Rig complete, Shafting, Pulleys, Belting, etc. Four Saws of different make, all in order. This mill now located in Greenville County, Va., near Emporia, and immediately on the line of the A. C. Line Road at Trego, and can be seen running any day. It has been held and run by the trustee for three years, and kept in fine repair, and is sold to settle up the company's affairs. Terms liberal to a responsible purchaser. Address JOHN LAMB, Trustee, Richmond, Va.

### MANUFACTURING PLANT FOR SALE.

In Alabama. Oil Mill, Guano Factory, Munger Steam Ginery. Oil mill will work 25 tons seed per day. Fertilizer factory will turn out 75 tons commercial guano per day. Ginery will gin 25 bales cotton per day. All new, and located in a fine agricultural section, with worlds of cotton seed, and cheap coal. The planting interest will demand most of plants output at retail prices. Guaranteed annual dividend of 25 per cent. Write F. A. G., care Manufacturers' Record.

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There is no manufactory of this kind in the Southern States. Terms reasonable. Address

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Most valuable Ore and Timber Lands, improved by Washing Machinery, Trainways, etc., etc., nine miles from Johnson City, Tenn. To be sold at

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This property contains immense beds of various Iron Ores as well as Manganese; a great amount of Timber. Everything easy of access. Railroad through centre of property; blast furnaces near Hotel accommodations. Take train to Johnson City, Tenn., thence train to Unicoi.

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**FOR SALE.**—A small Malleable Iron Foundry plant complete (Air Furnace); long established, with an established trade and the succession to a very large list of job customers' patterns, which can mostly go to the purchaser. Address **H.**, 1000 Teutonic Bldg., Chicago. Best Malleable Castings to Order.

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The city of Houston, Texas, is desirous of entering into correspondence with owners or manufacturers of Light Plants, with a view to city ownership of the plant necessary to light the city by the city of Houston and to have the same of sufficient capacity to meet the future needs of a rapidly growing city. Address **B. R. WARNER**, City Secretary, Houston, Texas.

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Where Real Estate has increased 500 per cent. in the last few years. If you contemplate going South, why not go where there is no over-production of agricultural products, there is no over-production of Sugar or Rice, the two principal crops of this section.

Choice fruits and early vegetables always bring good prices, especially if placed on the market of the world when other sections of the country are frozen up.

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**A FINE STOCK COUNTRY, RICH FRUIT LANDS** well adapted to the growing of Hay, Oats, Corn, Cotton, Rice, Sugar-cane and all of the semi-tropical fruits. The opportunities that are there offered are fast being taken up. If you will write to

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CROWLEY, LA., they will send you a map of this section and their new book, "Come and See," which will furnish you full information about this favored land.

### WESTERN NORTH CAROLINA LANDS

Farms, Timber Lands, Water Powers and choice City Property in the fertile Catawba Valley among the Carolina Mountains. Write for illustrated pamphlet, "Catawba Valley and Highlands."

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## 24,328 Acres of Land

For sale at very low prices and on easy terms. The greater part of these lands are just the thing for colonies of industrious farmers and fruit-growers. I also have Gold Mines, Mica Mines and Water Powers on my list of desirable lands for sale. Correspondence solicited.

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### MASTER COMMISSIONER'S SALE.

## The Electric Railway Company of Savannah.

Notice is hereby given, that in pursuance of a decree of the Circuit Court of the United States for the Southern District of Georgia, Eastern Division, entered on the 20th day of July, 1896, in the suit of H. A. Pevear vs. The Savannah Street Railroad et al.; The Oglethorpe Savings & Trust Co., Trustee, vs. The Electric Railway Co. of Savannah, consolidated cause in equity, I, the subscriber, Master Commissioner thereby designated, will, on TUESDAY, the FIFTH (5th) DAY OF JANUARY, Eighteen Hundred and Ninety-Seven (1897), or the day to which I may adjourn such sale, at TWELVE (12) o'clock noon (Savannah time), on the mortgaged premises, at or near the front entrance of the office of said The Electric Railway Co. of Savannah, on the northeast corner of Gwinnett and Price streets, in the city of Savannah, and State of Georgia, sell at public auction to the highest bidder or bidders, without valuation, appraisement, redemption or extension, all the railroad, premises and property, rights, privileges and franchises, covered by and described in the mortgage of The Electric Railway Co. of Savannah to The Oglethorpe Savings & Trust Co., Trustee, dated January 1, 1895, and by said final decree directed to be sold; a general description whereof is as follows:

All that certain street railroad, situate, lying and being in the County of Chatham, State of Georgia, and in the city of Savannah, now built and in operation, as follows:

1. The Price Street Line: Commencing on St. Julian street, on the east side of the market, and running east along said street to Johnson Square; thence around the north side of said Square to St. Julian street; thence east along said street to Price street; thence south along Price street to Duffy street; thence west along Duffy street to Cemetery street; thence south on Cemetery street to Anderson street (being the Cemetery Spur), and north along Cemetery street to Roberts street; thence northeasterly along Roberts street to West Broad street; thence north along West Broad street to South Broad street; thence east along South Broad street to Montgomery street; thence north along Montgomery street to St. Julian street; thence east on St. Julian street through the market, including the iron bridge, foundations, wires, etc., to the place of beginning.

2. A line beginning at the corner of Gwinnett and Price streets, in the city of Savannah, running thence along Gwinnett street across the tracks of the Savannah, Florida & Western Railway Co. to Ott street; thence southwardly along Ott street to Lover's Lane or Anderson street.

3. The Belt. Beginning on Bay street, at the corner of East Broad street, and running westwardly along Bay street from East Broad to West Broad, southwardly on West Broad street from Bay to Liberty, eastwardly on Liberty from West Broad to Montgomery, southwardly

on Montgomery from Liberty to a point south of the extended limits of the city of Savannah on a line coincident with (or nearly so) the extension of Estill avenue, eastwardly along said line and along Estill avenue from Montgomery street to Habersham street, northwardly along Habersham street from Estill avenue to Gwinnett street, eastwardly along Gwinnett street to East Broad street, northwardly along East Broad street to Bay street, to the point of beginning, including the bridge over the right of way of the Savannah, Florida & Western Railway Co. on Habersham street.

4. Beginning at the intersection of the above belt with Liberty street on East Broad street, and running thence eastwardly along Liberty street to Randolph street, northwardly along Randolph street to President street, westwardly along President street to East Broad street, where it again intersects with the belt at the corner of East Broad and President streets.

5. Beginning at the above belt on the corner of West Broad and Bay streets, and running thence in a westerly direction along Indian street to West Boundary street; thence northwardly along West Boundary street to bridge crossing the Ogeechee Canal at Central Railroad Wharves.

6. Beginning at the belt on the corner of Bay and Barnard streets, and running thence southwardly along Barnard street to Anderson street; thence eastwardly along Anderson street, crossing Habersham street, to East Broad street; thence northwardly on East Broad street to Gwinnett street, where it again joins the belt.

7. Also, all that certain lot, tract or parcel of land situate, lying and being in the City of Savannah, County of Chatham and State of Georgia, known and described as follows: As Lots Numbers One Hundred and Three to One Hundred and Ten, inclusive, in Johnston Ward, City of Savannah, said lots being bounded on north by a lane, east by Ott street, south by Gwinnett street and west by Harmon street.

Together with all and singular, the rights, members, hereditaments and appurtenances to the same belonging or in anywise appertaining, and all the estate, right, title and interest of said The Electric Railway Co. of Savannah in and to the same or any part thereof, at law or in equity, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, that is to say: All of the railroad of said The Electric Railway Co. of Savannah, including double track and turn-outs, constructed along the lines above described, including the right of way, roadbed, superstructures, bolts, wires, poles, insulators, iron, rails, ties, splices, chairs, nuts and spikes; all the land and depot grounds, station-houses and depots, viaducts and bridges, timber, materials and property purchased or built for the construction, equipment or operation of said lines; all machine shops, implements, tools and personal property used thereon or upon, or along the line of said road, or at its stations; all engines, dynamos and machinery, and all kinds of rolling stock, whether owned on January 1, 1895, or thereafter purchased by said Railway Company for use upon its railways hereinbefore described; and all other property of said Railway Company owned on said January 1, 1895, or thereafter acquired, and all its rights and privileges therein, or appertaining thereto; and all the revenues, tolls and income of said railroad and property; and all franchises and rights of said Railway Company, and all property and rights held by virtue and under authority thereof, together with the improvements, buildings, easements, rights, members, hereditaments and appurtenances to the same belonging, or in anywise appertaining.

And also, those certain lots of land in Johnston Ward, in Savannah, Georgia, known as Lots Numbered Ninety-seven (97), Ninety-eight (98), Ninety-nine (99), One Hundred (100) and One Hundred and One (101), and further subdivided into Lots "A," "B," "C," "D," "E" and "F," bounded together, north by Wolfe street, east by Lot Numbered Ninety-six (96), south by a lane and west by Lot Numbered One Hundred and Two (102), being the same property covered in an agreement for titles made to said Railway Company by the Savannah Real Estate, Loan & Building Company, recorded in the Clerk's Office of the Superior Court of Chatham County, Georgia, in Book of Mortgages Three I's (3 I's), folio four hundred and twenty-four

(424), upon which there remains due of purchase money the sum of Twenty-two Hundred (\$2200) Dollars, besides interest and all of the right, title, interest and estate of the said The Electric Railway Company of Savannah, in and to the same, the same being covered in said mortgage under the term of after-acquired property.

And also, all equipment, supplies and property, and all interest and title therein, owned by said The Electric Railway Company of Savannah, or purchased by the Receivers for use in the operation of said railway, or now in use upon the same.

The same will be sold in the manner and upon the terms as hereinafter stated, namely: The said property will be sold in one parcel, and struck off to the highest or best bidder. The Master Commissioner will receive no bid for the property unless, at the time of making the bid, the bidder shall deposit with him, as a pledge that such bidder will make good his bid, if accepted by the Court, the sum of Twenty Thousand (\$20,000) Dollars, in money or certified check. Of the price at which said property shall be sold, there shall be paid in cash, at the time of the sale, the sum of Eighty Thousand (\$80,000) Dollars, which shall be received as a part of the purchase price, and from time to time thereafter, after confirmation, such further portions of said purchase price shall be paid in cash as the Court may direct, in order to meet the expenses of this suit, foreclosure and sale, and the payment of bonds and coupons, with all interest thereon, of the principal value of Twenty-nine Thousand Eight Hundred (\$29,800) Dollars, secured by prior and underlying mortgages or deeds of trust specified in said decree, and the payment of any allowed preferential claims. The purchaser shall have the right to pay in, as a portion of said cash payment to be received and treated as money by the said Master Commissioner, bonds and coupons secured by said prior and underlying liens, to the extent of Twenty-nine Thousand Eight Hundred (\$29,800) Dollars, principal value, and coupons appurtenant thereto, with the interest thereon.

The Court reserves the right to reject any bid, and retake and resell the said property and premises, upon the failure of any purchaser, for twenty (20) days, to comply with any order of the Court requiring further payment of the bid, or any part thereof, or any allowed preferential claim.

The balance of the purchase price not required to be paid in cash may either be paid in cash, or the purchaser may satisfy and make good the said balance of his bid, in whole or in part, by paying over and surrendering to the Master Commissioner, outstanding bonds and overdue coupons appertaining thereto, or either, the said bonds and coupons being received at such price or value as shall be equivalent to the amount that the holders thereof would be entitled to receive thereon in case the entire purchase price was paid in cash.

If any bid shall be accepted by the Court, and the person making the same shall fail to comply with the conditions of sale, and all orders of the Court in respect thereto, the sum deposited by the bidder with the Master Commissioner shall be forfeited, and shall be applied as the Court may direct.

The approved purchaser or purchasers at said sale shall take the property purchased clear of the lien of any and all debts, obligations and liabilities of The Electric Railway Company of Savannah, or of The Savannah Street & Rural Resort Railroad Company, afterwards known as The Savannah Street Railroad.

Upon the confirmation of the said sale, and the completion of the purchase by the purchaser or purchasers, the said purchaser or purchasers will be entitled to receive from the Master Commissioner a deed or deeds of the property sold, and also a deed or deeds of assurance, to be executed and delivered according to law, by The Oglethorpe Savings & Trust Company, and also by The Electric Railway Company of Savannah.

For further particulars, reference is hereby made to said decree on file with the Clerk of the Circuit Court of the United States for the Southern District of Georgia, Eastern Division, at Savannah, Georgia.

JOHN D. HARRELL,  
Master Commissioner.  
December 1, 1896.  
GARRARD, MELDRIM & NEWMAN,  
Sols. for Oglethorpe Savings &  
Trust Company, Trustee.



**SECOND-HAND RAILS.**

If you have any old rails—either in good condition to relay, or if only fit to be used as scrap—advise us; we buy both kinds.

**ROBINSON & ORR,**  
419 Wood Street, PITTSBURG, PA.

**RELAYING RAILS.****Relaying Rails.**

Second-hand equipment and light new Steel Rails  
L. K. HIRSCH, 549 Rookery Bldg., Chicago.

**LOCOMOTIVE FOR SALE.**

One 26 ton Baldwin locomotive, dummy pattern; large cylinders 13" x 20"; 36,000 lbs. on drivers; especially suitable for switching and heavy grades, standard gauge; first-class condition and splendid machine. Terms satisfactory.

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**STEEL RELAYING RAILS.**

1000 to 1500 tons 60's in Canada.  
100 tons 56's at New York.  
300 tons 25's at Buffalo.  
500 tons 65's at Buffalo.  
1000 tons New 25's, 30's and 35's at New York.

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**STEEL RELAYING RAILS, OF ALL WEIGHTS.**

Logging Locomotives and Logging Cars, second hand but in good condition. Write us for Catalogue and Prices.

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**FOR SALE. RELAYERS.**

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201 Walnut Place, PHILADELPHIA.

Buyers of Scrap Iron and Steel. Sales agents for Pioneer Mining & Mfg. Co. of Alabama, Bar Iron. High grade North Carolina Ores.

**FOR SALE.****RELAYING IRON RAILS**

WITH SPLICES.

550 tons of 40-lb.

200 tons of 35-lb.

Suitable for Southern delivery.

**ISAAC JOSEPH IRON COMPANY,**  
31 Swift Building, CINCINNATI, OHIO.

**FOR SALE.****RAILS and ROLLING STOCK**

Steel Relaying Rails with Splices.  
1000 tons 56 lb., at Atlanta, Ga., or Montgomery, Ala.

1000 tons 60 lb., at East St. Louis, Ill.

1000 tons 60 lb., at Kansas City, Mo.

1000 tons 60 lb., at Chicago, Ill.

500 tons 60 lb., at Cincinnati, Ohio.

300 tons 30-lb. steel rails with splices, at Augusta, Ga. Lot Narrow Gauge Engines, flat and box Cars, at Galveston, Texas. Call or write

**BLOCK-POLAK IRON CO.**

CINCINNATI, OHIO, or CHICAGO, ILL.

We are always in the market to buy relaying rails and scrap iron of all kinds for cash.

**STEEL RAILS.**

Complete Outfit for Logging, Mining, Plantation and

**STREET RAIL AND TRAM ROADS.**

Light Sections, Rails and Spikes in Stock.

Rails and Equipment sold on Installation Plan Terms.

**LOCOMOTIVES, MOTORS, CARS, Etc., New and Second-hand.**

On Hand

143 tons new 35 lb. steel tee rails, New York delivery. 400 tons new 40 lb. steel tee rails and angle joints, Pittsburg delivery. Two miles relaying 20 lb. steel tee rails, New York State delivery. One mile 30 lb. steel tee rails, Penna. delivery. 35 tons of good relaying 25 lb. steel tee rails and fish plates, Port Royal, S. C. delivery. 50 tons of first class relaying 50 lb. steel tee rails, New York delivery. Also four Porter Dummy Engines in excellent condition; weight about 15 to 18 tons; standard gauge; very cheap.

**STEEL RAIL SUPPLY CO.**

Successors to HUMPHREYS & SAVAGE, NEW YORK.

**RAILROAD EQUIPMENT for Sale**

Relaying Rail and Splices, Locomotives, Coaches and Freight Cars.  
**HICKMAN, WILLIAMS & CO.**  
LOUISVILLE, KY.

**RAILWAY EQUIPMENT FOR SALE**

One Narrow Gauge Baldwin 12in. x 16in., with Tender; Two Standard Gauge Mason, 15in. x 22in., with Tender; Six Standard Gauge Flat Cars, 40,000 cap.; Six Standard Gauge Box Cars, 50,000 cap., ventilated; Twenty Narrow Gauge Gondola and Flat Cars, cheap. Also Relay Rails of all kinds and various other kinds of equipments and dealers in scrap iron. **HASKINS WILLIAMS,** 1916 Morris Avenue, BIRMINGHAM, ALA. Southern Agent United States Car Co.

**WM. MINNIGERODE,** Lynchburg, Va.

Rails, Fastenings, Locomotives, Cars, Engines, Boilers, Pumps, Piping, etc.

NEW AND SECOND-HAND. Write for prices.

**RAILS and EQUIPMENT.**

600 tons 45-lb. STEEL T RELAYING RAILS, with angle bars. One Baldwin 16x24 MOGUL LOCOMOTIVE. One Baldwin 14x22 4-WHEEL " One 50-ft. and one 45-ft. PASSENGER COACH, Atlanta inspection. For sale by **SOUTHERN IRON & EQUIPMENT CO.**, Atlanta, Ga.

**FOR SALE.**

STANDARD GAUGE LOCOMOTIVE. At condition, builder, Portland; drivers, 4, size, 68 in.; cylinders, 16in. x 22in.; weight on drivers about 75,000 lbs; number of tender wheels, 8; tank, 1500 gals.; vacuum brake and coal burning is in perfect condition, having just been thoroughly overhauled. Address **JOHN REID,** Superintendent, Jefferson Coal & Ry. Co., LEWISBURG, ALA.

**For Sale Cheap.**

3 36-in. Gauge Locomotives.  
48 36-in. " Freight Cars.  
3 36-in. " Passenger Coaches.  
**DAVIS, KELLY & CO.**, Louisville, Ky.

**LOCOMOTIVES**

We have on hand at our shops a large lot of good Locomotives all styles and sizes, thoroughly overhauled and in first-class condition ready for service. Will sell at wonderfully low prices. Also Boilers, Engines, Pumps, etc.

Address **POULTERER & CO.**

Bullitt Building, - PHILADELPHIA, PA.

**RELAYING RAILS and LOCOMOTIVES.**

WE OFFER FOR SALE:

100 tons 35-lb. relaying Steel T Rails and plates.  
200 tons 30 lb. relaying Steel T Rails and plates.  
125 tons 25 lb. relaying Steel T Rails and plates.  
60 tons 25-lb. relaying Iron T Rails and plates.  
60 tons 22-lb. relaying Steel T Rails and plates.  
100 tons 20-lb. relaying Steel T Rails and plates.  
50 tons 16-lb. relaying Iron T Rails and plates.

Seven Narrow Gauge Locomotives, various styles and sizes; one Standard Gauge Saddle-Tank Locomotive, weighing 25 tons; one Standard Gauge Locomotive, weighing 35 tons; one Standard Gauge Mine Locomotive, weighing six tons; ten Standard Gauge Flat Cars; ten Standard Gauge Box Cars; one Shay Locomotive, weighing 13 tons; twenty-two Narrow Gauge Flat Cars; six Narrow Gauge Passenger Cars; thirty pairs Narrow Gauge Trucks, suitable for logging cars.

Write us for prices and the terms you desire.

**SMITH & KILBY CO.**, Anniston, Ala.

**LOCOMOTIVES FOR SALE.**

Owing to the change of the motive power of the Lake Street Elevated Railway from steam to electricity, we offer for sale all the Locomotives, compound, standard gauge, owned by the line. None of them have had three years and many of them less than two years' service. The cost now to build these engines would be \$5,600. They are offered at greatly reduced prices. Two pairs coupled drivers, 44-in. diameter; four-wheel swing truck, wrought center steel-tired wheels, cylinders 13-in. by 21-in. diameter, 18-in. stroke; total weight about 65,500 lbs; weight on drivers about 40,000 lbs; fire-box 58 in. by 42 1/2 in.; fuel, hard or soft coal, coke or wood may be burned; two injectors. Eamer vacuum brakes for driving wheels, tender and train; steam heater connections. For full description and price write

**FITZ-HUGH & SPENCER,**  
1634 Monadnock Building, CHICAGO, ILL.

**CREOSOTED****PINOLINE WOOD PRESERVATIVE.**

Highest Antiseptic Qualities. Insoluble in water.

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**Fernandina Oil & Creosote Works, Fernandina, Fla.**

**PILES, LUMBER and CROSSTIES**

Treated with Dead Oil of Coal Tar.

**PINOLINE ROOFING PAINT.**

Durable, Elastic and Cheap.

Either for Cash

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Or on Easy Terms.

**HEAVY PASSENGER and FREIGHT LOCOMOTIVES**

Excellent Lot of

**PASSENGER, COMBINATION and FREIGHT CARS**

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Selected by our own experts from amongst some of the finest lots of Second-hand Equipment

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